


Brandeis University
Waltham, Massachusetts





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Brandeis University Bulletin

Graduate School of Arts & Sciences

AUGUST 31, 1978

1978-79

Programs, requirements, fees and other information are set forth herein as they exist at the date of this publication. Brandeis University reserves the right to make changes without notice.

Brandeis University admits students of any race, color, national and ethnic origin, sex, age or handicap to all the rights, privileges, programs, and activities generally accorded or made available to its students. The University does not discriminate on a basis of race, color, national and ethnic origin, sex, age or handicap in administration of its educational policies, admissions policies, scholarship and loan programs, and athletic and other University-administered programs. Inquiries concerning discrimination under Title IX of the Educational Amendments of 1972 and Section 504 of the Rehabilitation Act of 1973 may be referred to the Affirmative Action Coordinator, Brandeis University.

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Brandeis University

**The
Graduate School
of Arts and
Sciences
1978-79**

Waltham, Massachusetts

VOL. XXIX, No. 2, August, 1978

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“It must always be rich in goals and ideals, seemingly attainable but beyond immediate reach . . .

“It must become truly a seat of learning where research is pursued, books written, and the creative instinct is aroused, encouraged, and developed in its faculty and students.

“It must ever be mindful that education is a precious treasure transmitted — a sacred trust to be held, used, and enjoyed, and if possible strengthened, then passed on to others upon the same trust.”

— from the writings of
LOUIS DEMBITZ BRANDEIS (1856-1941)
on the goals of a university.



“Brandeis will be an institution of quality, where the integrity of learning, of research, of writing, of teaching, will not be compromised. An institution bearing the name of Justice Brandeis must be dedicated to conscientiousness in research and to honesty in the exploration of truth to its innermost parts.

“Brandeis University will be a school of the spirit — a school in which the temper and climate of the mind will take precedence over the acquisition of skills and the development of techniques.

“Brandeis will be a dwelling place of permanent values — those few unchanging values of beauty, of righteousness, of freedom, which man has ever sought to attain.

“Brandeis will offer its opportunities of learning to all. Neither student body nor faculty will ever be chosen on the basis of population proportions, whether ethnic or religious or economic.”

DR. ABRAM L. SACHAR, Brandeis' first president, at ceremonies
inaugurating the University, October 7, 1948

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Academic Calendar 1978-1979

Fall Term

Wednesday	August 30	Returning students register. Fees are payable in full at this time. Students who register later will be fined \$10.
Thursday	August 31	New students register. Fees are payable in full at this time. Students who register later will be fined \$10.
Friday	September 1	Sectioning.
Monday	September 4	No University Exercises.
Tuesday	September 5	Opening day of instruction in courses.
Tuesday	September 19	Final date for filing Study Cards. No program changes for Fall Term may be made after this date.
Monday	October 2 and	No University Exercises.
Tuesday	October 3	
Wednesday	October 11	No University Exercises.
Monday	October 16	No University Exercises.
Tuesday	October 17	Brandeis Monday. (Monday class schedule is in effect.)
Monday	October 23	No University Exercises.
Wednesday	October 25	Brandeis Monday. (Monday class schedule is in effect.)
Thursday	November 23 and	No University Exercises.
Friday	November 24	
Friday	December 1	Last day for February degree candidates to submit drafts of theses and dissertations to department chairmen, and to submit "Application for Degree" to Graduate School Office.
Wednesday	December 13	Last day of instruction.
Monday	December 18 through	Examination period. Winter Recess begins after last examination.
Friday	December 22	
Tuesday	January 2	Fall Term grades due and Incompletes from Spring Term 1978. Final date for faculty certification that February master's candidates have completed degree requirements, including language(s) and theses, and that Ph.D. candidates have defended dissertations.
Wednesday	January 24	Final date for admission to candidacy and for completion of language requirements for students expecting to earn the Ph.D. in May 1979.

Spring Term

Friday	January 26	Registration for students entering Spring Term.
Monday	January 29	Registration procedure for Spring Term begins, and opening day of instruction in courses.
Monday	February 12	Final day for filing Study Cards. No program changes for Spring Term may be made after this date. Final date for filing "Application for Financial Aid" for 1979-80.
Wednesday	March 14	Last day for May degree candidates to submit drafts of theses and dissertations to department chairmen and to file "Application for Degree" with Graduate School Office.
Monday	April 2	Final day for master's candidates to complete foreign language requirement(s) for May degree. Final day for completion of language requirements for students expecting to earn the Ph.D. in February 1980.
Monday	April 9	Brandeis Friday. (Friday class schedule is in effect.)
Tuesday	April 10	Brandeis Thursday. (Thursday class schedule is in effect.) Spring Recess begins after last class.
Friday	April 20	Final day for faculty certification that May Ph.D. candidates have defended dissertations. Final day for May degree candidates to discharge any financial indebtedness to the University.
Monday	April 23	Classes resume.
Wednesday	May 9	Last day of instruction.
Monday	May 14	Final date for deposit of Ph.D. dissertations at Graduate School Office by May degree candidates. Final date for faculty certification that master's candidates theses have been accepted.
Monday	May 14 through	Final examinations.
Friday	May 18	
Monday	May 21	Grades due for all degree candidates no later than 10 a.m.
Sunday	May 27	Commencement.
Tuesday	May 29	All Spring Term grades due and Incompletes from Fall Term 1978.



Breaking New Ground

Founded in 1948, amidst the post-World War II explosion of knowledge, Brandeis University literally began at the beginning—at the edge of an educational frontier—but is regarded today as one of the finest small, private research universities in the United States.

Named for the illustrious Supreme Court Justice Louis Dembitz Brandeis, whose far-reaching social vision advanced the welfare of his country, Brandeis is the only Jewish-sponsored, nonsectarian institution of higher learning in America. It is built on the faith in our basic heritage in the humanities, the sciences, the social sciences and the creative arts.

An unswerving commitment to excellence earned early recognition for the young university. Brandeis achieved accreditation in the shortest possible time (1953), and received Phi Beta Kappa recognition just 13 years after it was founded—the youngest institution so honored in over 100 years. The Ford Foundation, assessing the Brandeis record, buttressed its belief in the Brandeis potential during the 1960s with two major challenge grants for academic excellence—an accolade accorded to only five universities in the nation.

The giant multi-universities offer superb facilities and a faculty often too isolated by research from their students. Smaller institutions offer dedicated teachers who, for lack of time or facilities, have stopped doing research. The best of both models meet in only a handful of small schools in the United States. Brandeis is one of them.

Originally accredited in 1953 by the New England Association of Schools and Colleges, Brandeis was approved in 1977 for continuing membership in the Association for ten years, the maximum period available. Of the 2,000 accredited colleges and universities in the nation, about 100 are also known as “research centers.” Brandeis is among this select group. In a survey of professional school deans, the Florence Heller Graduate School for Advanced Studies in Social Welfare was recently ranked fourth in the country among schools of social work. Advanced Judaic studies at Brandeis were described as representing one of the best graduate programs in North America in a study at the Graduate Theological Union of Berkeley, Calif. that examined 75 American and Canadian programs. And the multi-million dollar Rosenstiel Basic Medical Sciences Research Center has attracted some of the top scientists in the world to probe into areas associated with the study of heart disease, immunology and cancer.

A Brandeis education encourages personal fulfillment, but only within the framework of social responsibility. Equipped by a liberal arts education, the individual sees reality as a whole with many intricately connected parts. That individual rejects the idea that there is only one truth, one perspective, one redeeming set of values. Study of the liberal arts is a time of inquiry, honest skepticism, and evolution of the intellect. Paradoxically, a liberal education—despite its lack of specialization—becomes sound preparation for a world that constantly makes old learning obsolete.

Brandeis, therefore, attaches prime importance to the liberal arts curriculum. It is designed to offer full academic opportunities for those students planning to pursue graduate or professional studies, as well as those whose educational objective is the baccalaureate degree.

For full information on the undergraduate curriculum, see the Bulletin of the College of Arts and Sciences.

The Graduate School of Arts and Sciences

History and Organization

The Graduate School of Arts and Sciences was formally established in 1953 when the University's Board of Trustees authorized graduate study in the Departments of Chemistry, Music, Psychology, and Near Eastern and Judaic Studies. The first Master of Arts degree was conferred in 1954; the first Master of Fine Arts degree, in 1954; and the first Doctor of Philosophy degree in 1957.

The general direction of the Graduate School is vested in a Graduate Council of the Faculty composed of the President and the Dean of Faculty, *ex officio*; the Dean of the Graduate School; and one representative, usually the chairman, of each of the several University departments and committees offering graduate instruction. The members of the Graduate Council are appointed by the President on the recommendation of the Dean of the Graduate School. The functions of the Graduate Council, exercised in consonance with University policy, are to determine requirements for admission; to provide programs of study and examinations; to establish and maintain requirements for graduate degrees; to approve candidacy for degrees; to make recommendations for degrees; to make recommendations for new areas of graduate study; to lay down such regulations as may be considered necessary or expedient for governing the Graduate School; and to exercise a general supervision over its affairs. The Dean of the Graduate School is the chairman of the Graduate Council and the chief executive officer of the Graduate School.

Objectives

The underlying ideal of the Graduate School is to assemble a community of scholars, scientists, and artists, in whose company the student-scholar can pursue study and research as an apprentice. This objective is to be attained by individualizing programs of study, restricting the number of students accepted, maintaining continual contact between students and faculty, and fostering the intellectual potential of each student.

Degrees will be granted on the evidence of intellectual growth and development, rather than solely on the basis of formal course credits. Fulfillment of the minimum requirements cannot, therefore, be regarded as the sole requisite for degrees.

The Graduate School of Arts and Sciences is designed to educate broadly as it trains professionally. It offers courses of study leading to the master's and doctoral degrees.

Areas of Graduate Study

During the academic year 1978-79, graduate programs will be offered in the following areas:

- | | |
|--------------------------------------|---------------------------------------|
| 1. Anthropology | 12. Joint Program of Literary Studies |
| 2. Biochemistry | 13. Mathematics |
| 3. Biology | 14. Music |
| 4. Photobiology | 15. Near Eastern and Judaic Studies |
| 5. Biophysics | 16. Philosophy and History of Ideas |
| 6. Chemistry | 17. Physics |
| 7. Classical and Oriental Studies | 18. Politics |
| 8. Comparative History | 19. Psychology |
| 9. English and American Literature | 20. Sociology |
| 10. History of American Civilization | 21. Theater Arts |
| 11. Jewish Communal Service | |

Rosenstiel Basic Medical Sciences Research Center

The Lewis S. Rosenstiel Basic Medical Sciences Research Center was made possible in 1968 through the gift of the late Lewis S. Rosenstiel, who was a Brandeis Fellow. The Center has established research programs in the basic medical sciences embracing work in biochemistry, biology, chemistry, microbiology, physics, biophysics and immunology. Staff members are jointly appointed to the Brandeis faculty basic science departments. The Center invites participation of distinguished scholars and medical scientists, offers hospitality to younger researchers at the undergraduate and fellowship level, sponsors symposia and colloquia and underwrites scholarly publications.

The Basic Medical Sciences Research Center contains sophisticated scientific equipment and facilities. Through cooperative programming, both with departments at Brandeis and in the Boston area, the Center has broadened the scope of basic medical science research offerings at Brandeis. Grants from such agencies as the National Science Foundation, National Institutes of Health, and American Cancer Society, among others, support research programs in the Rosenstiel Center.

The Rosenstiel Center sponsors the annual presentation of the Lewis S. Rosenstiel Award, given to recognize distinguished work in basic medical research. Created in 1971 to also honor Mr. Rosenstiel, the award consists of a handsome bronze medallion and a stipend of \$5,000.

The Florence Heller Graduate School for Advanced Studies in Social Welfare

Established in 1959, the Heller Graduate School has from its inception emphasized the value of studying social policy issues using a multidisciplinary approach. As such, it draws its faculty from the fields of sociology, economics, political science, and social welfare. The two graduate educational programs of the Heller School are designed to prepare students in the areas of planning, research and management in the field of human services. The School was made possible by an initial endowment from the late Mrs. Florence G. Heller of Chicago and is housed in the Florence Heller Building complex, which includes The Benjamin Brown Research Building. These buildings contain classrooms, offices and research facilities.

The program leading to the Ph.D. degree offers courses in research methodology, planning, policy analysis, and the applications of sociology, economics and political analysis to social issues. Training programs are conducted in the areas of Aging, Alcoholism, the Family, Health Policy, Income Maintenance, Manpower Development, Mental Health, and Mental Retardation and Developmental Disabilities.

Although not required, most students enter the Ph.D. program with an advanced degree or extensive work experience. We do, however, encourage the exceptional college graduate to apply.

It is usually necessary for a student to spend at least two years in residence. For those entering without prior graduate training an additional year is often required. Proven reading comprehension in a foreign language as well as a substantive paper and oral exam, and a dissertation must be completed to qualify for the Ph.D. degree.

The Heller School has recently instituted a master's degree program in Human Services Management. This program offers a curriculum combining courses in the techniques of human services management, social policy development and specific human service problem areas. The program is designed primarily for students with at least two years of post-college work experience, preferably in some aspect of the human services field. To accommodate the needs of such a student body, the program is designed to be completed in one full calendar year including an extensive program throughout the summer.

The School conducts an active program of policy-oriented research related to a broad range of social welfare issues. Current research endeavors include long-term care studies carried out by the Heller School's Levinson Policy Institute in conjunction with a newly formed Health Policy Analysis and Research Center (a consortium of the Heller School, MIT and Boston University), evaluation of the Massachusetts Workfare Program, a project assessing the ability of community service systems to plan and coordinate for deinstitutionalization of the mentally retarded, assessment of the socio-economic factors leading to high rates of adolescent pregnancy, and a project analyzing the barriers to the implementation of occupational alcoholism programs. Research projects are often interdisciplinary in character and involve collaborative activity between faculty and advanced students.

Further information is available in the Bulletin of the Heller School. Applications may be obtained from the Heller School Office, (617) 647-2944.

Graduate School Office

The Graduate School office is located in the Rabb Graduate Center. The office is open Monday through Friday from 9 A.M. to 5 P.M. All requests for information, catalogs and application forms should be addressed to the Dean of the Graduate School of Arts and Sciences, Brandeis University, Waltham, Massachusetts 02154.

Dining Facilities

Graduate students may sign meal contracts for varying numbers of meals or buy cash meal books. Arrangements for these contracts are made at the Food Director's Office in Kutz Dining Hall. A kosher kitchen is also maintained. Individual meals and light snacks may be purchased at Usdan Student Center.

Housing

Brandeis University owns approximately 40 apartment units available for single and married graduate students. All apartments are within easy walking distance of the campus. These include efficiency, one and two bedroom *unfurnished* apartments as well as efficiency and one bedroom *furnished* apartments. Single students may rent a space in an apartment and request that the Graduate Housing Office assign a roommate. The one bedroom apartments are particularly designed to allow use as two separate bedrooms with a common kitchen and bathroom. Early application for housing is encouraged.

Information, rental rates, and copies of the housing contract may be obtained by writing to the Graduate Housing Office, 150 Charles River Road, Coffman Building, Waltham, Massachusetts 02154.

In addition, through the auspices of the Office of Residence Life, the University maintains Off-Campus Housing Services (OCHS), located in Usdan Student Center. OCHS has extensive listings of available housing in the area, a list of realtors who may be helpful in a search for housing, and descriptions and information about nearby neighborhoods and towns. OCHS does not serve as a real estate agent, but rather as a resource to help in locating housing.

Office of International Programs

This office serves as the counseling center for students who come here from other countries. It advises students of special social and educational activities and provides assistance in fulfilling the legal procedures required by the U.S. Immigration Service to obtain working permits and documents necessary for extended periods of study, and in other technical matters which may arise. (See page 16.)

In addition, the office provides the Brandeis community with information on academic opportunities abroad such as Fulbright grants for graduate students and faculty, the Watson Fellowships and Rhodes Scholarships for seniors being graduated, the Abram L. Sachar International Fellowship Program (see page 35), and the Jacob Hiatt Institute for study in Israel. American students wishing to study abroad on university-accredited programs should consult this office.

Health Services

Because health and medical care are an integral part of the University experience the University Health Services provides a program of comprehensive medical and emotional care. A mandatory Health Participation Fee entitles students to medical services available at the Golding Medical Outpatient Facility and counseling services at Mailman House without additional charge during the academic year. The annual health fee does not pay for off-campus medical consultations, dental care, medications, laboratory tests, drugs, x-rays, reusable supplies or admission to the University's hospital, Stoneman Infirmary, and students are responsible for these charges.

In addition, each student is required to have personal health insurance. The student may elect to participate in the Brandeis University's Student Health Insurance Plan underwritten by Massachusetts Blue Cross-Blue Shield or may substitute membership in another plan.

Except for limited day care facilities, the Health Services and the use of the Stoneman Infirmary are available to students only during the period in which the University is in regular academic session.

Prospective students planning to matriculate in the college and graduate schools must submit a Health Examination Report completed by the family or personal physician prior to registration. In addition to information about previous health and details of the physical examination, evidence of immunization against tetanus, polio, measles, mumps and rubella are required. Since students may not register until the requirements have been satisfied, it is strongly recommended that the Health Examination Report be submitted by July 1.

The Student Health Insurance Plan is designed to defray expenses of those care situations which are beyond the scope of the Health Services; for example, laboratory and x-ray examinations, as well as hospitalization for illnesses or accidents of a more serious nature. The Plan extends for a full calendar year commencing with the first day of the academic year.

A detailed brochure of the services offered by the University Health Services as well as an outline of the details of the Plan is mailed to parents. Students and parents are urged to read this brochure carefully and keep it for reference.

Whereas situations not covered within the Health Services or by the Insurance Plan are infrequent, an awareness of these possibilities will lessen misunderstanding and disappointment. In such instances, students and their parents are responsible for expenses which are not covered by the University's health program or its associated insurance policy. Similarly, students and their parents are responsible for expenses which are not covered by alternative insurance programs substituted for the Brandeis University Student Health Insurance Plan.

Psychological Counseling Center

The Psychological Counseling Center, which is a part of the University Health Services, is located in Mailman House. It provides professional assistance to students who have personal or emotional problems. Those who wish such help may refer themselves directly to the Center. Their communications with the staff are held in strict confidence.



Admission

As a rule only well-qualified men and women who have completed the normal four-year program leading to the bachelor's degree will be considered for admission to the Graduate School. Graduates of foreign schools and others who have completed the equivalent of a bachelor's degree program may apply, describing the educational program they have completed.

Testing

Applicants for admission to the graduate programs in biochemistry, biophysics, politics, and psychology are required to take the Graduate Record Examination, including the aptitude test portion and preferably one advanced test in a field related to the proposed area of graduate study. Applicants for admission to the graduate program in psychology must also take the Miller Analogies Test. Applicants to the Jewish Communal Service program must submit the results of either the Graduate Record Examination or the Miller Analogies Test. All other applicants are urged to take the Graduate Record Examination. In order for the results of the Graduate Record Examination to be considered, the applicant should take the examination no later than January preceding the academic year for which application is made. Information concerning the Graduate Record Examination is available from the Educational Testing Service, Princeton, N.J. 08540, or Box 1025, Berkeley, Calif. 94704.

Foreign students, regardless of field of graduate study, are required to take the Test of English as a Foreign Language (TOEFL) unless English is their first language. Applications for admission to the test should be made to TOEFL, Educational Testing Service, Princeton, N.J. 08540, U.S.A. The test is administered at various established centers abroad.



Application

Specific requirements for each graduate program are to be found under the appropriate headings in this catalog. Each applicant should consult these requirements before filing an application. A student may apply to only one graduate department or program. Applicants to the Graduate School should write to the Dean of the Graduate School of Arts and Sciences, stating which program of study he or she wishes to enter. A catalog and appropriate forms will be forwarded to the applicant. The "Application for Admission" should be completed and returned in duplicate as soon as possible. Applicants requesting financial aid must file a GAPS FAS form. Closing dates for receipt of applications by the several graduate departments are included with the application materials.

Applications for admission for the Spring Term must be filed by December 1. Students are not usually admitted at midyear, and those who do gain admission are not normally eligible for financial aid.

All applicants must arrange to forward, in duplicate, official transcripts of all undergraduate and graduate work. In addition, they must have forwarded, on forms provided by the Graduate School, two letters of recommendation, preferably from professors with whom they have studied in their proposed area of study. Applicants who have engaged in graduate study elsewhere should request at least one of the recommendations from a professor with whom they have done graduate work.

Many departments also require the submission of samples of work as well as the materials described above. Applicants should consult departmental requirements in a later section of this catalog for enumeration of additional materials to be submitted.

All applications must be accompanied by an application fee of \$25, payable by check or money order to Brandeis University. No application will be processed until this fee is paid.

Admission Procedure

All applicants are considered on a competitive basis. The number of students admitted each year in each department is limited so that the Graduate School may operate effectively under its distinctive principles of individualized study and apprenticeship. Consequently, admission may sometimes be denied to qualified persons. Meeting the minimum standards of admission merely qualifies the applicant for a place in the group from which final selections will be made. Selections are based on the applicant's ability to do graduate work of high quality, as shown by: the distinction of his or her previous record, particularly in the proposed area of study; the letters of recommendation submitted in support of the application; and his or her presumed adaptability to the particular graduate programs offered by Brandeis University. In addition, knowledge of foreign languages, relevant practical experience in the field, samples of work, the results of the Graduate Record Examination, and indications of character are considered.

Each application for admission with all supporting records is first examined by the appropriate department or committee. The department or committee recommends to the Dean of the Graduate School which applicants should be selected for admission and for financial aid. The Dean reviews all applications in the light of departmental recommendations, and informs each applicant of the results in April.

Acceptance

A student who has been accepted for admission to the Graduate School will be notified by a letter specifying the date by which he or she must accept the offer of admission and awards, if any. If a student selected for admission indicates that he or she does not intend to accept the offer or fails to reply by the date specified, the admission offer becomes void and another applicant may be accepted.

Brandeis University subscribes to the "Resolution Regarding Scholars, Fellows, Trainees and Graduate Assistants" of the Council of Graduate Schools in the United States. The resolution states:

"Acceptance of an offer of financial aid (such as a graduate scholarship, fellowship, traineeship, or assistantship) for the next academic year by an actual or prospective graduate student completes an agreement which both student and graduate school expect to honor. In those instances in which the student accepts the offer before April 15 and subsequently desires to withdraw, the student may submit in writing a resignation of the appointment any time through April 15. However, an acceptance given or left in force after April 15 commits the student not to accept another offer without first obtaining a written release from the institution to which a commitment has been made. Similarly, an offer by an institution after April 15 is conditional on presentation by the student of the written release from any previously accepted offer. It is further agreed by the institutions and organizations subscribing to the above Resolution that a copy of this Resolution should accompany every scholarship, fellowship, traineeship, and assistantship offer."

Students who are accepted must provide the Graduate School Office with an official final transcript of their undergraduate record and of any graduate work in process at the time of acceptance. In addition, students who are accepted *are required to complete and return a medical questionnaire and a health insurance form*, which will be sent with notification of acceptance. All acceptances are conditioned on subsequent approval by the University Health Office. All persons admitted to the Graduate School must give evidence of their physical and psychological capacity to carry on their studies.

If, after having been admitted, a student cannot attend, he or she should notify the Dean of the Graduate School as soon as possible. If such students are to be admitted for a subsequent academic year, they must request reactivation of their applications at the appropriate time, and bring them up to date.

Applicants who have been denied admission may reapply in a later year, particularly if they have had further training which would strengthen their applications or if they can submit additional letters of recommendation.

Admission to the Graduate School does not imply that the successful applicant has been accepted as a candidate for a graduate degree. Superior performance at Brandeis University is essential. Admission to candidacy for the M.A. or M.F.A. is granted by the graduate department or committee administering the program of study. Admission to candidacy for the Ph.D. is granted by the Graduate Council on the recommendation of the department or committee administering the program of study.

Readmission

Admission is valid only for one academic year. A student's record is reviewed annually, and he or she may be denied readmission. Students completing the requirements for the M.A. or M.F.A., and students who already hold a master's degree but who have not yet been admitted to candidacy for the doctorate, must make formal application for readmission by the first business day in March. The readmission application must be filed with the Graduate School Office.

Foreign Students

Graduates of foreign colleges and universities who have the equivalent of an American bachelor's degree, and foreign students who have been graduated from American universities may compete for admission and financial assistance at Brandeis, which is authorized under Federal law to enroll nonimmigrant alien students.

In order to ascertain the eligibility of the candidate, Brandeis University requires that each applicant file a *Preliminary Request for Application* form obtained by writing to either the Graduate School of Arts and Sciences or the Office of International Programs any time before September 1 of the year preceding the anticipated admission date. This information will be evaluated and the application form itself will be sent to those who qualify.

Final applications must be completed and returned by February of the year in which the student seeks fall admission. Successful applicants will be notified as soon as possible.

Entrance Examinations. All applicants whose major language is not English must take the Test of English as a Foreign Language (TOEFL); thorough competence in English is required for study at Brandeis. All applicants are urged to take the Graduate Record Examination (GRE). They should consult this catalog for the departments which may *require* this examination. For information concerning the administration of both these examinations, applicants should write to the Educational Testing Service, Princeton, N.J. 08540.

Financial Aid. Financial aid in the form of scholarships, fellowships, teaching assistantships and research assistantships is available to only a few of the most outstanding students. In any case, the total assistance offered usually covers only a small proportion of the student's total annual expense. Hence the student, when applying for admission, should indicate a means of financial support. At least \$3,500 in United States currency is necessary to cover living costs for the nine months academic year, exclusive of expenses for tuition, travel and summer or vacation periods.

Employment. The regulations of the United States Immigration and Naturalization Service limit strictly the amount of paid work that a student from abroad may do. During the summer vacation, the Immigration Service may permit the student to obtain off-campus employment. Such permission cannot be guaranteed, however. Students must petition on special United States government forms, through the Office of International Programs, for permission to accept such employment.

Requirements for the Degree

The following general requirements apply to the awarding of graduate degrees in all areas of study. For specific program requirements students should consult the appropriate section of this catalog.

Master of Arts

In order to qualify for a master's degree, the student must complete the equivalent of one full year of graduate study at Brandeis University, ordinarily computed at a minimum of eight half-courses of approved study. Departments may, at their option, require more than eight half-courses of graduate study. All departments offering master's programs require that the candidate demonstrate a reading knowledge of at least one foreign language and pass satisfactorily a general or qualifying examination which, at the department's discretion, may be in one or more parts and may be written, oral, or both. Where a thesis is required for the master's degree, two copies must be submitted to the department chairman in final form no later than the first Friday in January for a February degree or April 15 for a May degree.

The master's degree must be earned within four years from the inception of graduate study at Brandeis University.

Master of Fine Arts

In order to qualify for the degree of Master of Fine Arts in Music, the candidate must complete with distinction twelve half-courses at the graduate level, and must meet the specific requirements for the degree as set forth under the Music Department, *Requirements for the M.F.A. Degree*, in a later section of this catalog. Two copies of the thesis or composition must be submitted to the department chairman in final form no later than the first Friday in January for a February degree or April 15 for a May degree.

In order to qualify for the degree of Master of Fine Arts in Theater Arts, the candidate must complete the equivalent of sixteen half-courses at the graduate level and must meet the specific requirements for the degree outlined under Theater Arts, *Requirements for the M.F.A. Degree*, in a later section of this catalog. Students enrolled for specialization in dramatic writing must submit two copies of a play in final form in lieu of a thesis.

The Master of Fine Arts degree must be earned within five years from the inception of graduate study at Brandeis University.

Doctor of Philosophy

In order to qualify for the degree of Doctor of Philosophy, a student must ordinarily complete a minimum of three years of graduate study, including two full years of residence and a third year devoted to the preparation of a doctoral dissertation. Under certain conditions credit for advanced standing will be granted for work taken in residence in graduate schools of other universities. Each department or committee reserves the right to require prospective candidates for the degree to perform work in excess of its minimum standards to assure thorough mastery of the area.

Prospective candidates must demonstrate proficiency in at least one foreign language. In all areas of study the student must satisfactorily pass a general or qualifying examination which, at the department's discretion, may be in one or more parts and may be written, oral, or both. In addition, all prospective candidates must write a doctoral dissertation and defend it in a final oral examination.

To be eligible for the Ph.D. degree in any given year, the student must have (1) been admitted to candidacy for the doctorate, (2) completed all residence requirements, and (3) passed all language and qualifying examinations, by the close of the semester preceding the semester in which the degree will be conferred.

Students entering Brandeis University with no previous graduate work must earn the doctorate within eight years from the inception of study. Students who are granted credit for a year of graduate work completed elsewhere must earn the degree within seven years from the inception of their study at Brandeis.

Language Requirements

A reading knowledge of at least one foreign language is required of all students engaged in programs of study leading to the M.A., the M.F.A. and the Ph.D. degrees. Several programs have additional language requirements. Each department or program determines which languages are acceptable as satisfying the foreign language requirements. For specific requirements of each program, consult the appropriate section of this catalog.

Students are expected to satisfy the language requirements as soon as possible. The completion of the language requirements at another university does not exempt the candidate from the Brandeis requirements.

A student who has not passed an examination in at least one foreign language by the end of the first year of study will not be eligible for financial aid from the University for the second year.

Many departments require that language examinations be passed at an earlier time than specified in these provisions. Special requirements will be found in the departmental statements included in this catalog.

Admission to Candidacy

A student who (a) has demonstrated a knowledge and mastery of the subject matter of the field at a level satisfactory to the department or committee; (b) has passed all departmental qualifying examinations; (c) has indicated a capacity for independent research of high quality; and (d) has satisfactorily completed all specific department or committee requirements for admission to candidacy may, at the recommendation of the department or committee, be admitted under the rules of the Graduate Council to candidacy for the degree of Doctor of Philosophy. In order to be eligible for the degree, the student must be admitted to candidacy at least one semester before it is awarded.

Application for Graduate Degrees

Candidates for the M.A., M.F.A., and Ph.D. degrees must file with the Graduate School Office an application for the degree no later than December 1 for a February

degree and no later than March 1 for a May degree of the academic year in which the degree is to be conferred. Upon the written recommendation by a candidate's department or committee that the application be approved, the record will be reviewed by the Graduate Council which recommends the student to the University's Board of Trustees for the degree. In case of failure or withdrawal from candidacy in any year, the student must reapply by filing a new application in a later year.

Dissertation and Final Oral Examination

When a student is ready to embark upon the preparation of a doctoral dissertation, a Dissertation Reading Committee of no less than three faculty members, at least one of whom is a tenured member of the faculty, will be appointed by the chairman of the student's department. The student's principal adviser will serve as the chairman of this committee. The Dissertation Reading Committee will guide the research for and preparation of the dissertation. When this committee certifies its approval of the dissertation to both the Dean of the Graduate School and the chairman of the student's department, the latter, with the approval of the Dean of the Graduate School, will appoint a Dissertation Examining Committee to preside over the student's Final Oral Examination and will notify the candidate of the time and place of the Final Oral Examination at least three weeks prior to the scheduled date of the examination. Two copies of the dissertation, as well as an abstract of no more than 600 words, should be submitted to the Dissertation Reading Committee for approval. Style and format of dissertations are determined by the respective departments.

The dissertation, when approved by the readers, must then be deposited in the department office where it will be available for inspection by all interested members of the faculty for at least two weeks prior to the Final Oral Examination.

The Dean of the Graduate School will publish in the *Brandeis University Calendar* the time and place of a candidate's Final Oral Examination and the title of the doctoral dissertation. The Final Oral Examination will be open to any member of the faculty engaged in graduate instruction and to invited faculty members from other institutions.

The Dissertation Examining Committee, recommended by the department chairman and approved by the Dean of the Graduate School, must be composed of a minimum of three faculty examiners, at least one of whom shall be a tenured member of the faculty and one of whom shall be from a graduate department outside the student's own, though preferably from a related area.

The examination may be restricted to a defense of the dissertation, or may cover the whole field of the dissertation. The candidate will be notified by his or her department or committee of responsibility for coverage prior to the examination.

A report, signed by the Dissertation Examining Committee, certifying the candidate's successful performance on the Final Oral Examination, will be submitted to the Dean of the Graduate School.

Deposit and Publication of Dissertation

No later than the dates specified in the current academic calendar for February and May degrees, the candidate must deposit two copies of the finished dissertation, including the original typescript, in a state suitable for microfilm and Xerox publication. Both copies of the dissertation must have the signed approval of the dissertation supervisor and readers. One copy will be retained by the library, the other will be returned to the student, both bound. The candidate must also submit two copies of an

abstract of the dissertation, not exceeding 600 words, which has been approved by the dissertation supervisor.

A detailed statement of the Graduate School publication regulations is available from the Graduate School Office. See also the statement in this catalog, under *Fees*, on the Final Doctoral Fee.

Academic Regulations

Registration

Every resident student must register in person at the beginning of each semester, whether attending regular courses of study, carrying on research or independent reading, writing a thesis or dissertation, or utilizing any academic service or facility of the University. Students who have completed their residence requirements and who wish to utilize any academic service or facility of the University must also register.

There is a charge of \$10 if registration is not completed at the time specified in the academic calendar.

Registration consists of payment of all fees for the semester and filing a Registration Card and other duly completed required forms. Program Cards are filed at a later date.

Program of Study

Before filing a Program Card, the student should plan a program of study in consultation with the chairman of the department. All courses for which the student registers for credit must be listed on the Program Card.

Audited courses must also be listed, noted as "audit," and the Program Card must be signed by instructors of such courses.

Graduate students may not normally register for an undergraduate course (numbered below 100) for degree or residence credit unless they secure the signed approval of both the instructor of that course and their department chairman. The student must then petition the Dean of the Graduate School for the desired credit, and must receive approval before or at the time of registration. Credit will not be given for undergraduate courses taken to make up deficiencies in the student's preparation for a graduate program of studies, nor will credit ordinarily be given for language courses that are not part of the student's program of studies. Under no circumstances may a student receive credit toward completion of degree or residence requirements for courses undertaken to aid in the completion of language requirements. Scholarship students may not apply their scholarships toward the remission of tuition for undergraduate courses taken to remedy deficiencies. The completed Program Card must be signed by the department chairman before submission at registration, and the department chairman will certify whether the program of study is full-time or part-time and, if part-time, whether one-quarter, one-half, or three-quarters time. Full-year courses must be re-entered on the Program Card at spring registration, and ordinarily they may not be dropped at midyear. Students wishing to drop a full-year course at midyear must petition the Dean of the Graduate School for permission, after receiving the written approval of the instructor of the course and of the chairman of their department. Students may not register at midyear for a full-year course without the written approval of the instructor of the course and their department chairman.

Program Cards are filed approximately two weeks after the opening days of instruction (see Academic Calendar for specific date) and are considered to be final.

Auditing Courses

The privilege of auditing courses without fee is extended to all regularly enrolled graduate students except special students. Special students may audit courses by paying for them at the same rate as those taken for credit. No course may be audited without the permission of the instructor. Auditors may not take examinations or expect evaluation from the instructor. No credit is given for an audited course.

Change of Program

Only under unusual circumstances are students allowed to drop courses after filing their Study Cards. To do so, a Course Change Card is obtained from and returned to the Graduate School Registrar. Courses must be dropped no later than one week prior to the beginning of an examination period. Each course dropped is subject to a \$10 fee.

Registration in Terms of Time

Advanced students — those who have completed one full year of residence, either by graduate work at Brandeis or by receiving credit for graduate work done elsewhere — may register in terms of time, subject to the signed approval of their department chairman. Their Program Cards must indicate that they are registering full-time or a specific fraction thereof (one-quarter, one-half, or three-quarters).

Registration in terms of time is a device that helps to individualize programs of study and permits increased freedom for independent research for advanced graduate students. Registration in terms of time frees students to pursue a program of study that partially accepts or bypasses altogether the system of formal courses, although students registering in terms of time will usually register for an advanced research or dissertation course. Their time will be spent in such research and reading as will be most beneficial to their development as scholars.

Absence from Examinations

Students who are absent from a midyear or final examination without an accepted excuse will receive a failing grade for that examination. No students may be excused from such examination unless for emergency or medical reasons, nor may they be excused if they were able to notify the instructor in advance and failed to do so. Cases involving absence are referred to the chairman of the department who will decide whether a make-up examination shall be allowed, and will notify the Dean of the Graduate School. The examination must be taken within six weeks of the opening of the next semester.

Grades and Course Standards

Graduate students are expected to maintain records of distinction in all courses. Letter grades will be used in all courses in which grading is possible. Courses graded “Non-credit” are those which carry no credit but which are required of the student. In thesis or research courses, if a letter grade cannot be given at the end of each semester or academic year, “Credit” or “No Credit” may be used.

"No Credit" and any letter grade below B-minus are unsatisfactory grades in the Graduate School. A course in which the student receives an unsatisfactory grade will not be counted toward graduate credit.

At the end of each academic year the Registrar of the Graduate School will issue to each student a report of grades and of degree requirements satisfactorily completed.

Incompletes

A student who has not completed the research or written work for any course may receive a grade of "Inc." (incomplete) or a grade of failure at the discretion of the instructor in the course. A student who receives a grade of "Inc." must satisfactorily complete the work of the course in which the "Inc." was given in order to receive credit for the course and a letter grade. An "Inc.," unless given by reason of the student's failure to attend a final examination, must be made up no later than the end of the term following the term in which it was received. When failure to take a final examination has resulted in an "Inc.," resolution of that grade to a letter grade must occur within six weeks of the beginning of the next semester. If a student requires additional time to settle an incomplete grade, he or she may petition the Dean of the Graduate School for an extension of time, provided the petition is signed by the instructor of the course and by the department chairman. Such a petition must be filed prior to the expiration of the deadline for making up an incomplete.

Credit for Work Done Elsewhere

Graduate level courses taken prior to matriculation at Brandeis University may not be counted toward fulfillment of the residence requirement for the Master of Arts degree, although a department may accept work taken elsewhere in partial fulfillment of specific course requirements for the degree. In that case, additional courses are designated to replace courses from which the student has been exempted.

A maximum of one term of residence credit for graduate level courses taken prior to matriculation may be counted toward fulfillment of the residence requirements for the Master of Fine Arts degree.

Students admitted to Ph.D. programs may file an application to have graduate level courses taken prior to matriculation counted toward fulfillment of residence requirements at this institution. A maximum of one year of residence credit may be granted.

Applicants for transfer credit will not necessarily be granted the credit requested. Each department reserves the right to require of any student work in excess of its minimum standards to assure thorough mastery of the area of study. In all cases, courses being transferred must carry a grade of "B" or better and must have been earned at an appropriately accredited institution.

After completing one term of residence at a full-time rate, or the equivalent at a part-time rate, students eligible to apply for transfer credit may do so. Forms are obtained at the Graduate School Office and are submitted to the student's department for its approval. The form is then forwarded to the Dean of the Graduate School for final approval. The Dean will advise the applicant of any action taken.

Credit for work at another institution taken concurrently with studies in the Graduate School must be approved for potential transfer credit by both the student's depart-

ment and the Dean of the Graduate School prior to registration for such courses. Such approval is granted only in unusual circumstances. Students who formally cross-register with Boston College, Boston University and/or Tufts University through the Consortium do not need prior approval.

Residence Requirements

Residence requirements for all graduate degrees are computed by determining the amount of registration for credit and the tuition charges. Part-time students and teaching assistants pursuing part-time programs of study for credit complete their residence requirement when their fractional programs (one-quarter, one-half, three-quarters) total the amount required of a full-time student.

Master of Arts

The minimum residence requirement for all students is one academic year on a full-time graduate credit program at the full tuition rate, or the equivalent thereof in part-time study. Transfer credit may not be applied to residence requirements for the Master of Arts degree.

Master of Fine Arts

The minimum residence requirement for all students in Music is three semesters at a full-time rate, at the full tuition rate for each semester, or the equivalent thereof in part-time study. Residence may be reduced by a maximum of one term with approved transfer credit.

The minimum residence requirement for all students in Theater Arts is four semesters at a full-time rate, at the full tuition rate for each semester, or the equivalent thereof in part-time study. Residence may be reduced by a maximum of one term with approved transfer credit.

Doctor of Philosophy

The minimum residence requirement for all students is two academic years on a full-time graduate credit program for each year, at the full tuition rate for each year, or the equivalent thereof in part-time study. A maximum of one year's approved transfer credit may be granted toward residence for the Ph.D. degree.

Full-Time Resident Students

A full-time student is one who devotes the entire time, during the course of the academic year, to a program of graduate work at Brandeis University, to the exclusion of any occupation or employment. In exceptional cases, however, a student may accept outside employment with the approval of the department chairman.

A full-time program may include a combination of teaching and research assistance, work leading to the fulfillment of degree requirements, such as preparation for qualifying, comprehensive, and final examinations, or supervised reading and research, or the writing of M.A. theses and Ph.D. dissertations, as well as regular course work.

A full-time resident student may take as many courses for credit in any semester as are approved by the department chairman, but no student may receive credit for, or be

charged for, more than a full-time program in any semester. Thus the minimum residence requirement for any degree may not be satisfied by an accelerated program of study or by payment of more than the full-time tuition rate in any single academic year.

Ph.D. candidates and students for whom the M.A. and M.F.A. degrees are terminal degrees may continue as full-time students on completion of their residence requirements by registering at the post-residence fee rate (see p. 26).

Part-Time Resident Students

A part-time student is one who devotes less than the entire time to a program of graduate work at Brandeis University. Students may register for a credit program of one-quarter, one-half, or three-quarters time. A part-time student may engage in outside employment with the permission of the department chairman.

Students wishing to pursue part-time resident study leading to a graduate degree must explain in writing, at the time they seek admission, why full-time study is not possible. Students receiving financial aid from the University, who wish to change their status from full-time to part-time residency, must file with the Graduate School Office an explanation of why full-time study is no longer possible.

Post-Resident Students

A graduate student who has completed residence requirements and who registers in order to utilize academic services or University facilities while completing degree requirements is a post-resident student.

Special Students

Properly qualified persons who wish to audit or to take courses without working for a degree will be admitted. Special students are not eligible for University loans, scholarships, fellowships, teaching or research assistantships, nor will they be considered for resident counsellorships. Special students who later wish to change their status to that of part-time or full-time students working for a degree must apply for admission as resident students. They must also file a special petition if they wish credit to be accepted for any courses taken at Brandeis as special students. Credit for such course work may be granted in exceptional cases.

Leave of Absence

Students who have not completed their residence requirements may petition for leave of absence. The petition must have the approval of both the chairman of the department and the Dean of the Graduate School. Leaves of absence up to one year will normally be granted to students in good academic standing who present compelling personal reasons or need to do work off campus in connection with their graduate studies. Time spent on authorized leaves of absence will not be deducted from the maximum time permitted to complete degree requirements.

If for any reason a student must extend a leave of absence, he or she must request such extension in writing before the leave of absence expires. Failure to do so will result in being automatically dropped from the Graduate School roster.

Continuation

Graduate students who have completed residence requirements and who are not registered during the period in which they are completing degree requirements are considered Continuation Students. A student in this category is not eligible for a leave of absence, except for reason of ill health. (See Fees, p. 27.)

Withdrawal

A student who wishes to withdraw from the Graduate School at any time before the end of the academic year must give immediate written notice to the department chairman and to the Dean of the Graduate School. Failure to comply may subject the student to dishonorable discharge, refusal of readmission, cancellation of the privilege of securing an official transcript and, in the case of a student withdrawing within 30 days of the beginning of classes, loss of eligibility for partial refund of tuition. Such a student must pay tuition for the full semester. Permission to withdraw will not be granted if the student has not discharged all financial indebtedness to the University or has not made arrangements for subsequent payment to the satisfaction of the controller's office.

Discipline

The disciplinary authority of the University is vested in the President of the University and, subject to his reserved powers, in the Dean of the Graduate School of Arts and Sciences and in the principal administrative officers, including the chairmen of the several graduate programs, in all cases involving graduate students.

Original jurisdiction in any case involving infraction of any rule or regulation or standard of conduct by a graduate student shall lie within the administrative officer of the University who is immediately concerned. Serious cases will be referred for hearing to the Disciplinary Committee of the Faculty Council of the Graduate School of Arts and Sciences, chaired by the Dean of the Graduate School. The chairman of the student's department shall be invited to attend any meeting at which such a case is discussed.

The Graduate Student Council has been invited to elect annually one graduate student from the School of Social Sciences, one student from the School of Science, and one student from the Schools of Creative Arts and Humanities, together to comprise a panel of three, who may form the Graduate School's Committee on Discipline to consider disciplinary cases involving non-academic offenses when the student who is being considered for discipline so requests.

Exclusion, Dismissal or Expulsion

The University reserves the right to dismiss or exclude at any time any student whose character, conduct, academic standing or financial indebtedness it regards as undesirable, through disciplinary procedures established in the Graduate School. Neither the University nor any of its trustees or officers shall be under any liability whatsoever for its disciplinary action, exclusion or dismissal.

The University also reserves the right to revoke, cancel or reduce at any time any financial or honorific award made to any graduate student, for character, conduct, academic standing or financial indebtedness regarded by the University as undesirable; neither the University nor any of its trustees or officers shall be under any liability whatsoever for cancelling, revoking or reducing any award.

Fees and Expenses

Payment of tuition and other fees due on the day of registration is a part of the registration procedure. A student who is not prepared to pay such fees on the day of registration will be refused the privilege of registration.

A student who defaults in the payment of indebtedness to the University shall be subject to suspension, dismissal, and refusal of a transfer of credits or issuance of a transcript.

Such indebtedness includes but is not limited to, delinquency of a borrower in repaying a loan administered by the Student Loan Office, and the inability of that office to collect such a loan because the borrower has discharged the indebtedness through bankruptcy proceedings. If the student is a degree candidate, his or her name will be stricken from the rolls.

A student who has been suspended or dismissed for nonpayment of indebtedness to the University may not be reinstated until such indebtedness is paid in full.

Application Fee: \$25. Payable by all applicants for admission at the time the application for admission is submitted. It is not refundable. Checks and money orders should be made payable to Brandeis University. No application for admission will be processed until this fee is paid. This fee is not required of Brandeis graduates.

Tuition Fee: The fees for tuition in the Graduate School for 1978-79 are as follows:

Full-time resident students: \$4,650 per year, or \$2,325 per term.

Part-time resident students:

<i>Per Term</i>	<i>Per Year</i>	<i>Fraction Program of Study</i>
\$1,743.75	\$3,487.50	Three-quarters
\$1,162.50	\$2,325.00	One-half
\$ 581.25	\$1,162.50	One-quarter

Special Students: \$582.00 per course per term.

In view of the constantly increasing costs of education, students may expect one or more tuition increases during their academic careers.

Post-Residence Fee: Students who have completed their residence requirements and who wish to continue in residence to utilize any academic service or University facility must register at the usual tuition rates. Graduate students whose tuition is not being paid from scholarship or fellowship funds awarded by the University or other sources may petition the Dean of the Graduate School for a reduction of the post-residence fee to \$350. Students who continue to utilize any academic service or University facility after having completed residence, but who have failed to register, are subject to disciplinary action by the Dean of the Graduate School. A student who is eligible for registration on the post-residence basis may file a program card for full-time study, in terms of courses or in terms of time or any combination thereof, provided the department chairman approves of the program of study as being a full-time program and signs the program card.

Mixed Tuition Fee: In the event that a student needs to register for only a part-time program (one-quarter, one-half, or three-quarters) in order to complete residence requirements, but wishes to register for additional courses or take a fuller program of study, he or she shall be charged for the part-time program needed to complete residence, plus the post-residence fee.

Late Registration Fee: \$10. Payable for failure to complete registration at the time announced by the Graduate School Office.

Change-of-Program Fee: \$10. Payable by any graduate student who wishes to drop a course after filing Study Cards.

Continuation Fee: \$20. Payable annually by graduate students who have completed residence requirements and who are not registered during the period in which they are preparing for the completion of degree requirements. Students in this category are not eligible for leaves of absence.

Master's Fee: \$50. A candidate for the M.A. or the M.F.A. who is subject to the Continuation Fee and who earns a degree in any semester following one in which he or she has not been in residence, shall pay the Master's Fee. The fee is chargeable only once.

Final Doctoral Fee: \$250. This fee covers all costs for the year in which the Ph.D. degree will be conferred, including the costs for the microfilm publication of the dissertation, publication of the abstract of the dissertation in *Dissertation Abstracts*, issuance of a Library of Congress number and appropriate library cards, binding two copies of the dissertation, one for use in the University Library, and one Xerox-printed copy in book form for the author. The Final Doctoral Fee also covers the rental expenses for academic robes for graduation and cost of the diploma. Students who have been in residence in their final year may deduct any tuition charges which they may have paid to the University in that final year. Students who have paid the Continuation Fee in the final year may deduct that fee from the Final Doctoral Fee.

NOTE: All candidates for the Ph.D. degree must pay the \$250 Final Doctoral Fee prior to the receipt of their degrees.

Reinstatement Fee: \$10. Payable by a student who, after withdrawal, suspension or dismissal, has been reinstated with the consent of the Dean of the Graduate School.

Transcript Fee: \$2. Students, former students, and graduates who request official transcripts of their records in the Graduate School are charged \$2 for each copy issued after the first one, which is free. Requests by mail for transcripts must be accompanied by a check in the correct amount, payable to Brandeis University.

Diploma Fee: \$10. Payable by candidates for the M.A. and M.F.A. degrees.

Student Insurance Fee: \$160. Payment of the Insurance Fee entitles the graduate student to participate in the benefits of the Health Insurance Program. The fee is payable at registration and no portion is refundable. Student Insurance is optional for Special Students.

Student Health Fee: \$90. Entitles the graduate student to use of the Health Services.

Dependent Coverage: Although the health services offered at Stoneman Infirmary are not extended to dependents of students, an optional family health insurance plan is available to married students for a fee of \$700. Special Students are not eligible for this plan.

Refunds

The only fee which may be refundable, in part, is the tuition fee. No refund of the tuition fee will be made because of illness, absence or dismissal during the academic year. If a student withdraws, he or she may petition the Dean of the Graduate School for a partial refund of tuition in accordance with the following:

1. Tuition:

Withdrawal: Before the opening day of instruction: 100% of semester tuition.
On or before the second Friday following the opening day of instruction: 75% of semester tuition.
On or before the fifth Friday following the opening day of instruction: 50% of semester tuition.
After the fifth Friday following the opening day of instruction: no refund.

2. *Scholarships:* In the case of a scholarship student who withdraws, the student's account will be credited with the same proportion of the semester scholarship as charged for tuition: 25% if the student leaves on or before the second Friday; 50% on or before the fifth Friday; and, 100% thereafter. The balance of the scholarship will be cancelled.

All refunds are subject to review and final approval of the controller.

Financial Assistance

To help students whose records indicate scholarly promise, the University makes available a variety of awards and work opportunities. No student is eligible for aid without filing with the Graduate School Office a standard financial aid form (GAPSFAS). All scholarships and fellowships are granted for one academic year; therefore, a registered student who holds a scholarship or fellowship must apply annually for a renewal by filing the "Application for Financial Assistance."

All awards are granted and accepted with the understanding that they may be revoked or reduced at any time for undesirable conduct or academic standing.

Ordinarily, no student may hold a fellowship, scholarship, or teaching assistantship for more than two years of study for the M.A. degree, for more than three years of study for the M.F.A. degree, or for more than four years of study for the Ph.D. degree. Ordinarily, no student may receive a scholarship, fellowship, or teaching assistantship after one year of study at the post residence fee. Priority in making awards is given to full-time students and teaching assistants.

In the case of a student receiving financial aid from Brandeis University, whether in the form of a teaching assistantship, scholarship or fellowship, the approval of the Dean of the Graduate School is required, in addition to the approval of the department chairman, before the student may engage in outside employment.

Scholarships

A scholarship is an award, on grounds of scholarly ability and need, of financial credit that may be used exclusively for remission of tuition fees. Full scholarships and partial scholarships are available. Scholarship students are liable for all but tuition charges.

Fellowships

A fellowship is an academic award of honor to outstanding students of good character to help them in furthering advanced study and research. The amount of the stipend depends on the quality of the student's record and performance; need is also considered in most cases. A fellowship recipient must pay tuition fees unless the award includes a scholarship in an amount covering tuition. No services are required of students for fellowship or scholarship awards.

Teaching Assistantships

Teaching assistants are resident students in the Graduate School who do part-time teaching as part of their training and are paid. The University has established teaching assistantships to enable distinguished graduate students to gain teaching experience while continuing their studies. Teaching assistants are eligible for other awards, including scholarships and fellowships.

A full-time student who is a teaching assistant receives residence credit for, and is charged tuition for, that fraction of the program spent as a student in fulfillment of degree and residence requirements.

First-year graduate students are eligible for appointment as teaching assistants in the sciences. In other areas, however, first-year students are rarely appointed. Foreign students are not normally eligible for appointment as teaching assistants in their first year of graduate work unless they have had training at another American university.

Teaching assistantship appointments are made on the authority of the President of the University by the Dean of the Graduate School who, in turn, acts on the recommendation of a student's department chairman. Appointments are made for periods of one year or one semester, but are renewable. All awards of teaching assistantships to incoming students are conditioned on an interview with a University representative, prior to registration. The University reserves the right to terminate any appointment at any time for due cause. Conduct, character or academic standing that is regarded as undesirable may constitute cause, but the University need not assign any reason for the termination of an appointment at any time. All teaching assistantship appointments are made and accepted with this understanding, and neither the University nor any of its trustees or officers shall be under any liability whatsoever for the summary termination of a teaching assistantship.

Research Assistantships

Research assistantships are available in the science areas. First-year graduate students are not normally eligible for appointment. Application should be made to the chairman of the department or committee administering the graduate program.

Loans

Federally Insured Student Loan Program (FISLP). A student is eligible for a federally insured student loan if he meets the following requirements: (1) is accepted for enrollment or is attending Brandeis University and is in good standing as determined by the University; (2) is carrying at least one-half the normal full-time workload; (3) is a

citizen and/or national of the United States or is in the United States for other than a temporary purpose; (4) can demonstrate need. An eligible student may be able to borrow up to \$2,500 in any academic year at a 7% interest rate, and does not have to begin a five to ten year repayment until nine months after he ceases to be a full-time or half-time student. Special Students are normally ineligible for such loans.

Information and applications for this program are available from banks, savings and loan associations and credit unions.

Students who plan to borrow through a source which participates in the Federally Insured Student Loan Program must have on file at the Graduate School Office a current Graduate and Professional Student Financial Aid Service form (GAPSFAS). Forms may be obtained at the Graduate School Office or from the Educational Testing Service, Princeton, N.J. No FISLP loan can be processed until this form is received.

Resident Counselorships

A limited number of positions are available for both married and unmarried men and women as counselors in the University residence halls. Applications may be obtained from the University Residence Halls Office and should be returned no later than April 15. Appointments are made by the Residence Hall Officer on recommendation of the Dean of the Graduate School on or before June 25.

Office of Student Employment

The Office of Student Employment assists students who need and desire part-time work. Students seeking part-time work should register with the Office of Student Employment. New students are not assigned part-time work prior to arrival on campus.

Endowed Schools

Crown School of Graduate Studies in American Civilization

The Irving and Rose Crown School of Graduate Studies in American Civilization was established by the generosity of Brandeis Fellows Irving and Rose Crown. Its primary objective is to attract and support gifted students in their work toward the Ph.D. in the History of American Civilization.

In order to meet the public service objective of the school, a Crown Fellowship award is occasionally made to special students both here and abroad—drawn from the Foreign Service, the media, and other important facets of public life—who would benefit from participation in graduate studies in the School.

Strengthened by the achievements of Crown Fellows of recent years, the Crown School contributes to the deeper understanding of the American past and present, thereby helping to shape the nation's future.

Danielsen School of Philosophy, Ethics, and Religious Thought

The Albert V. Danielsen School of Philosophy, Ethics, and Religious Thought was made possible through a gift from Dr. Danielsen, a Fellow of the University, from Wellesley Hills, Mass.

The School includes the Department of Philosophy, which now combines undergraduate and graduate programs through the M.A. and Ph.D. degrees. The graduate program in philosophy is designed to prepare students for careers in the field as scholars and teachers, and it places traditional emphasis on logic, epistemology, metaphysics, value theory and the history of philosophy. Added to the two fully endowed chairs of philosophy in the School is the Albert V. Danielsen Chair in Christian Thought.

The Danielsen School thus hopes to encourage the advancement of philosophical thought in the context of contemporary issues, following the broadest scholarly and interdisciplinary approaches in an age of ecumenism and imperative social need.

Fierman School of Chemistry

The Harold and Minnie Fierman School of Chemistry, created through a benefaction from Brandeis Trustee Harold L. Fierman, incorporates graduate and undergraduate programs, including research activities, lecture programs and colloquia.

At the undergraduate level the curriculum is highly diversified, including basic courses in analytical, organic, physical, and inorganic chemistry. The program emphasizes the mastery of fundamental chemical principles with early exposure to research programs in preparation for graduate studies in chemistry, medicine or allied fields.

At the graduate level, M.A. and Ph.D. candidates pursue advanced studies and research projects in synthetic organic and organometallic chemistry, physical organic chemistry, structured inorganic chemistry, quantum chemistry, photochemistry, enzyme reactions, chemical physics, and laser chemistry. Of the over 100 students awarded the Ph.D., many have held a variety of governmental, industrial or foundation fellowships. Postdoctoral fellows come to the department from leading universities around the world.

The School has been aided, in part, by grants from the National Institutes of Health, National Science Foundation, Energy and Research Development Administration, Research Corporation, and the Petroleum Research Foundation. Research conducted under these agencies has been published in over 700 papers in leading professional journals.

Fisher School of Physics

The Martin Fisher School of Physics, established through a gift from the late Martin A. Fisher of New York City, a Fellow of the University, encompasses both theoretical and experimental physics. The Fisher School incorporates the graduate and undergraduate programs in physics and also provides the setting for lectures and colloquia in physics. Scholarship and fellowship assistance provided by Mr. Fisher enhances the teaching and research at the undergraduate, graduate, and postdoctoral levels.

The School's undergraduate program ranges from introductory courses in classical and modern physics, computer sciences, and astronomy to advanced courses in atomic and nuclear physics; classical, continuum and statistical mechanics; quantum mechanics; nuclear, solid state, and mathematical physics. M.A. and Ph.D. programs include courses in astrophysics, high energy physics, plasma physics, quantum theory

of fields, solid state physics, and general relativity. Experimental and theoretical research is carried out in high energy physics, solid state physics, properties of condensed matter, quantum theory of solids, and quantum field theory.

Grants from such agencies as the National Science Foundation and the Atomic Energy Commission, among others, support research programs in the Fisher School. The Fisher School also provides research opportunities for a large number of postdoctoral fellows.

Kutz School of Biology

The Milton and Hattie Kutz School of Biology was made possible through a gift from the estate of the late Hattie Kutz of Wilmington, Del., a Fellow of the University. The School encompasses the University's undergraduate and graduate biology departments. The biology curricula present a comprehensive body of courses that advance from fundamental studies to more complex areas, with special attention given to new discoveries and the results of current experimentation.

Students are offered a balance between traditional background in biology and the thorough discussion of new knowledge. They are encouraged to engage in original research and independent study. The biology program also provides research and teaching opportunities for a large number of postdoctoral fellows.

A major portion of the governmental, industrial, and private research grants awarded to the University is devoted to varied projects in biology and health sciences. Distinguished scientists appear frequently at colloquia and lectures to explain their investigations.

Lown School for Near Eastern and Judaic Studies

Created through the generosity of the late Brandeis Trustee Emeritus Philip W. Lown of Miami Beach, Fla., the Lown School for Near Eastern and Judaic Studies encompasses an intensive teaching and research program in ancient and modern Jewish thought, history, culture, and issues, offered by both the undergraduate and graduate departments of Near Eastern and Judaic Studies. The University has assembled an array of distinguished scholars who offer an extremely broad range of programs designed to prepare students for scholarly careers or for communal service.

The School includes the Center for Jewish Communal Service, organized for the purpose of further research and seminars dealing with contemporary issues and for providing graduate education for students interested in professional careers in Jewish communal service and education.

The Lown School for Near Eastern and Judaic Studies cooperates closely with the American Jewish Historical Society, whose headquarters building on the Brandeis University campus was completed during 1968.

Poses School of Fine Arts

The Poses School of Fine Arts, established through a gift from Brandeis Trustee and Mrs. Jack I. Poses of New York City, embodies the broad undergraduate curriculum in the fine arts. It also incorporates the Poses Institute of Fine Arts, which supplements course work and workshops in painting and sculpture.

The undergraduate program in fine arts provides a substantial area of studies in the form and meaning of art from antiquity to the present day. The program stresses individual creativity and the varied techniques of the artist.

The Poses Institute of Fine Arts mounts exhibitions of paintings, sculpture, artifacts, and other forms of contemporary and traditional art in the University's museum and gallery.

Mr. and Mrs. Poses also underwrite the Jack and Lillian Poses Creative Arts Awards of Brandeis University, presented annually in the areas of theater arts and film, music and dance, literature, and fine arts.

Swig School of Political Science

A generous benefaction from Brandeis Trustee Emeritus Benjamin H. Swig of San Francisco has established the Swig School of Political Science. The Swig School encompasses the University's Politics Department, including several endowed academic chairs established earlier through the efforts of Mr. Swig. Among these are: the Harry S. Truman Chair in American Civilization; the Earl Warren Chair in American Constitutional Studies; the Christian A. Herter Chair in International Relations; and the Adlai E. Stevenson Chair in International Politics.

Special Scholarships and Fellowships

Milton H. and Audrey P. Callner Fellowship Fund in International Affairs

This fund was established with resources provided by the will of Chicagoan Milton H. Callner, a Fellow of the University, and supplemented with matching funds from the Ford Foundation. Augmented through the generosity of Mrs. Callner, a Fellow of the University, income from the fund is used annually for fellowships in international affairs or politics.

Irving and Rose Crown Fellowships in the History of American Civilization

Underwritten by the Crown family of Chicago, the Fellowships subsidize graduate students in the field of the History of American Civilization with substantial grants to complete their doctoral studies. Subject to annual review, awards are normally renewable over a period of four years. The Fellowships are designed to attract gifted scholars who plan careers in teaching, research and writing, or in public service and allied areas. Candidates are selected by the executive committee of the graduate program and reviewed by distinguished authorities from other universities. Fellowship awards are made to advanced students with outstanding records in graduate and professional programs, as well as to BA's with honors degrees in history and related fields. Crown supplemental grants in aid of research are also available to Crown Fellows.

Sadie and Joseph Danciger Fellowship Endowment

This endowment, a bequest of Sadie Danciger of Tucson, Arizona, was established by Harry L. Jacobs, Arthur Mag and the Commerce Bank of Kansas, trustees of the Sadie Danciger Fund. Funds are granted to students in contemporary Jewish studies who are engaged in Jewish communal service and educational work or in pursuing research.

Samuel C. and Minna L. Dretzin Graduate Fellowships in the Life Sciences

Established by Brandeis Fellow and Mrs. Dretzin, of New York City, in honor of Dr. Frederick H. King, the Dretzin Fellowships provide tuition and fellowship support for five students whose work is in areas related to cancer research. Awards are normally made to first and second-year graduate students and are renewable for one year.

Martin Fisher Endowed Scholarship and Fellowship in Physics

In conjunction with his gift to underwrite teaching and research in physics, Martin A. Fisher, a Fellow of the University, established this student financial aid fund in 1968 to benefit undergraduate and graduate students in physics. Thus far, the endowment of Mr. Fisher, who died in 1976, has assisted sixteen students in completing their baccalaureate and doctoral degrees.

Gillette Graduate Teaching Fellowships

Created in 1961 by The Gillette Company of Boston, these annual fellowships provide tuition and stipends for doctoral candidates in biology, biophysics, biochemistry, chemistry, or physics. In general, the Fellowships are awarded on the basis of merit to graduate students who plan careers in research at universities or in industry.

Goldwyn Life Sciences Fellowship Endowment

Established by the Samuel Goldwyn Foundation of Los Angeles, this grant provides support for graduate students studying the life sciences. Preference is given to foreign students who need financial aid in order to study in the United States. Renewable fellowships — covering tuition, health fee, research support, and a stipend — are provided annually.

James Gordon Grant for Government Fellowships

Financial support from the James Gordon Grant for Government, of Chicago, has permitted the Department of Politics to develop a special doctoral dissertation program providing fellowships to selected qualified candidates for the Ph.D. degree in politics. To be eligible, students must have completed their first year of graduate work, either at Brandeis or elsewhere. The fellowship awards are limited to individuals whose dissertations deal with approved topics within the fields of American urban and/or local political problems. Fellowships may be held for one or two years. The support also provides research funds, summer stipends, and travel money for field work or investigation in connection with preparation of the dissertation.

Maurice Gordon Music Fellowship Endowment

Established in 1966 through the generosity of Mr. Gordon of Newton, Massachusetts, this endowment provides fellowships for students with preference given to those studying music.

Mary and Abbey Hirschfield Fellowships in the Humanities

Created through a bequest to Brandeis University from Mary Hirschfield of Chestnut Hill, Mass., the Fellowships offer annual assistance to graduate students in the humanities. Selection of students to receive the Fellowships is made by a special committee of Brandeis University faculty, which determines choices based on academic achievement and financial need. Students eligible for the Fellowships are taken from the areas of classical and Oriental studies, English and American literature, Romance and comparative literature, Germanic and Slavic languages, philosophy and history of ideas, Near Eastern and Judaic studies, and Jewish communal service.

Max Jacoby Fellowship Endowment in Judaic Studies

Established by Belle Jacoby of New York City, this gift creates a memorial tribute to her husband. The income provides fellowships to graduate students in the field of Judaic studies.

Bernard and Miriam Kessner Fellowships Trust Fund in Biology and Chemistry

The Kessner Fellowships were underwritten by the late Dr. and Mrs. Bernard H. Kessner of Bay Harbor, Fla., Fellows of the University, to provide annual support to graduate students in the fields of biology and chemistry. The Kessner Fellowships are designed to help students who are planning careers in research and university teaching to complete their doctoral training.

Gustav Klein and Hattie F. Klein Student Aid Fund — Endowed

Created through the bequests of Mr. and Mrs. Klein of Philadelphia, Pennsylvania, this gift serves the dual purpose of providing loans as well as granting fellowships to graduate students working to obtain the Ph.D. in any area of either basic or applied medical research and sciences.

Rabbi Dr. Zoltan Kohn, Sandor Barna, and Isadore M. and Bertha Gudelsky Fellowships

Given in 1977 by Dr. Laszlo N. Tauber, Bethesda, Md., in memory of Rabbi Dr. Zoltan Kohn, Sandor Barna, and Isadore M. Gudelsky and in honor of Bertha Gudelsky, this fund provides annual fellowships to gifted graduate students who aspire to careers in basic sciences.

Harry and Mildred Remis Scholarship and Fellowship Fund in the Creative Arts

Established by Brandeis Trustee and Mrs. Harry Remis of Boston, Mass., this endowment offers assistance to students who have demonstrated promise and potential in fine arts and music.

Remis Awards are given to undergraduates at the end of their junior year to facilitate summer study at centers of art and music either in this country or abroad.

The Harry and Mildred Remis Graduate Fellowships in Music are offered to qualified graduate students seeking to pursue careers in musical theory and composition and in the history and literature of music. The Fellowships are normally given to candidates who have completed one year of graduate work, on the basis of demonstrated excellence in academic areas and general musicianship, on creative potential and promise, and on financial need.

Rogoff Foundation Trust

The Rogoff Foundation Trust, established by the trustees of the Rogoff Foundation Inc., provides support for scholarships and fellowships in sciences that are basic to pre-medical and medical education, particularly the life sciences. Selection is limited to students with records of high academic achievement.

Abram L. Sachar International Fellowship Program

Established in 1969 by the Trustees of Brandeis University in tribute to the twenty-year incumbency of the University's first president, it is a highly selective program that supports Brandeis graduate and undergraduate students abroad during a period of study or research complementary to their education here.

The program operates on a variety of levels. For example, a graduate student, after passing the qualifying examinations, may pursue advanced research abroad, a graduating senior may spend a year of study abroad as a culmination of the Brandeis experience. A well-qualified undergraduate who plans a period of study at a foreign university or program which has offerings not available at Brandeis is also eligible for a Sachar grant.

Eligibility requirements for applicants include a high level of scholastic achievement, financial need as indicated by University records and outstanding intellectual competence or creative ability. Application forms are available at the Office of International Programs, Sachar International Center.

Samuel Schulman Graduate Teaching Fellowships

Underwritten by Brandeis Trustee Samuel Schulman of Los Angeles, the Fellowships, established in 1974, aid outstanding graduate students in any academic field who are engaged in teaching at Brandeis. The program is designed to give valuable supervised classroom teaching experience to students while they pursue their studies, and to support outstanding student-scholars who are committed to work in university teaching and research.

Joseph Schumer Fellowship Endowment Fund

Provided by a bequest of Mr. Schumer of New York City, this endowment was established by his nephews, Norman Kemper and Richard Schumer, who were co-executors of Mr. Schumer's estate. The income from this fund provides fellowships to needy and gifted students engaged in the study of music.

Zale-Lipshy Endowed Scholarship and Fellowship Fund

This scholarship and fellowship fund was established in 1974 by the Zale Corporation of Dallas and its friends and associates throughout the country, in honor of three principals of the firm: Brandeis Trustee Emeritus Morris B. Zale, William Zale and Brandeis Fellow Ben A. Lipshy, all of Dallas. The gift was given in part to recognize the 25th Anniversary of Brandeis and the 50th Anniversary of the Zale Corporation, and is designed to assist undergraduate and graduate students in all disciplines. Funds are awarded solely on the basis of merit and need.

Areas of Study and Courses — 1978-1979

All courses meet for three hours a week unless the course description indicates otherwise. The presence of “a” in the course number indicates a half course given in the Fall Term; “aA” indicates a full course given in the Fall Term; “b” indicates a half course given in the Spring Term; “bB” indicates a full course given in the Spring Term; “aR” indicates a course given in the Spring Term; “bR,” a course given in the Fall Term which is identical with an “a” or “b” course of the same number given in the Fall and Spring Terms respectively; the use of “c” after a course number indicates that the course is given as a half course but meets throughout the year.

The University reserves the right to make any changes in the offerings without prior notice. Faculty and course listings are accurate as of June 1, 1978.

***Course not offered for 1978-79.**

AMERICAN CIVILIZATION

See History of American Civilization (page 90).

ANTHROPOLOGY

Objectives

The graduate program in anthropology is designed primarily to train students at the doctoral level. The objective is to provide the student with a broad understanding of the four major fields of anthropology, with particular stress on ethnology and social anthropology, and to prepare the student for independent research and scholarship. Accordingly, there is a strong emphasis on training in comparative work and field work, which are integral parts of the doctoral program.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. Students need not have an undergraduate major in anthropology or sociology-anthropology. If admitted, however, the student without previous training in anthropology may be required to take additional courses, as determined by the department, to complete his or her residence requirements. Students should have a reading knowledge of one foreign language.

Faculty

Professor Robert A. Manners, *Chairman*: American Indians. Modern cultures. Method and theory. Africa.

Professor Helen Codere: Method and theory. Economic anthropology. Primitive art. Africa.

Professor George L. Cowgill: Archaeology. Mathematical and computer methods in anthropology. Mesoamerican civilizations. Origins of early states. Population.

Professor David Kaplan: Economics. Method and theory. Mexico.

Visiting Professor Alex Weingrod (*Fall Term*): Modernization. Peasant societies. Mediterranean.

Associate Professor Robert C. Hunt: Social anthropology. Modernization. Irrigation. Mesoamerica.

Associate Professor David E. Jacobson: Social anthropology. Urban social organization. Africa. U.S.A.

Associate Professor Marguerite S. Robinson: Social organization. South Asia.

Associate Professor Benson Saler: Comparative religion and folk philosophies. Psychological anthropology. Mesoamerica. South America.

Assistant Professor Marvin Davis: Social and cultural anthropology. Politics. Law. Social stratification. South Asia.

Assistant Professor Judith T. Irvine: Ethnography of communication. Linguistics. Social stratification. Africa.

Lecturer Pierre-Yves Jacopin: Structuralism. Psychological anthropology. South America. Europe.

Instructor D. Neil Gomberg: Physical anthropology. Comparative anatomy. Primate studies.

Instructor Judith F. Zeitlin: Archaeology. Ethnohistory. Human ecology. Mesoamerica.

Instructor Robert N. Zeitlin: Archaeology. Development of complex societies. Mesoamerica.

Degree Requirements

Master of Arts

No one will be accepted in the program who is not a doctoral candidate. However, the M.A. degree will be awarded upon successful completion of the following requirements: a minimum of eight half-courses, a high passing grade in a written qualifying examination in cultural anthropology, demonstration of proficiency in one foreign language, and a research paper based on a subject chosen by the student in consultation with his or her adviser.

Doctor of Philosophy

Admission to the Program. Students who complete the first year qualifying examination at a high level will be admitted to the Ph.D. program. Students with an M.A. in anthropology from other institutions, or with a minimum of a full academic year of graduate course work in anthropology from other institutions, may be admitted as prospective candidates for the Ph.D. degree. After a minimum of one semester's work, the Department may, at its discretion, grant the student transfer credit of up to one year toward the Ph.D. residence requirements. In most instances, transfer students will be required to pass the first-year qualifying examination, but, at the discretion of the Department, this may be waived.

Program of Study. During their first year of residence, students are assigned to an adviser with whom they design their course and research program. Maximum flexibility is encouraged regarding the choice and timing of course work. Doctoral candidates must complete two years of residence at Brandeis, and a minimum of sixteen half-courses. Work done at other institutions may be counted as part of residence, as stipulated above and in the general rules of the Graduate School. At least twelve half-courses must be in anthropology.

Students concentrating in cultural anthropology select areal and topical courses in their field of special interest. It is expected that students will attain a scholarly competence in at least one culture area and a topic of study. In addition, students are required to pass course examinations in statistics, physical anthropology, archaeology, and linguistics. The pre-doctoral examination in cultural anthropology, normally given

following two or three years of residence, includes questions based on the student's particular area and topical interests.

Students concentrating in archaeology must meet most of the same requirements as those concentrating in cultural anthropology. They will be expected to pass the first-year qualifying examination in cultural anthropology. The pre-doctoral examination will emphasize archaeology, but will also include other fields of anthropology.

Language Requirement. For Ph.D. candidates, the foreign language requirements include the satisfactory completion of the M.A. language examination and a research paper based upon sources in a foreign language.

Summer Training Program. A selected group of students in the Ph.D. program may be given the opportunity to participate in a summer field-training program under the direction of a faculty member. Previous field experience, the passing of the qualifying examination in cultural anthropology and the availability of funding determine eligibility and participation.

Admission to Candidacy. A student is admitted to candidacy on satisfactory completion of the following: the first year qualifying examination (where required); an examination in at least one foreign language; sixteen half-courses; two certification papers; and a pre-doctoral examination which may cover any aspect of anthropology and tests the scope of the student's knowledge and his or her ability to integrate that knowledge.

Field Work for the Dissertation. As soon as possible after qualifying for candidacy for the Ph.D., the candidate will normally be expected to begin at least a full year of field research. That research will ordinarily form the basis of the dissertation.

Dissertation and Defense. The degree of Ph.D. will be awarded only after successful defense of the dissertation.

Courses of Instruction

ANTHROPOLOGY 102a. Anthropological Linguistics I

An introduction to linguistics from an anthropological perspective. The course will stress: 1) how to analyze unfamiliar languages, and 2) the development of linguistic theory (syntax and phonology) in the 20th century. Readings in linguistic theory, especially on current trends, will be combined with practical work on languages from various parts of the world.

Ms. Irvine

***ANTHROPOLOGY 102b. Anthropological Linguistics II**

***ANTHROPOLOGY 103b. Language, Society and Culture**

ANTHROPOLOGY 104b. Hesiod's *Theogony*: Convergent Approaches of Classics and Anthropology

Hesiod's *Theogony* is the first significant mythological text from ancient Greece. Probably composed between the 12th and 7th centuries B.C., it has been transmitted throughout the subsequent history of Western civilization; however, it seems to us as strange as any myth from an exotic, traditional society. Using the convergent approaches of classics and modern anthropology, we will try to restore the text to its environment: social circumstances of performances and composition of the myths and the world-view they express.

Messrs. Jacopin and Muellner

ANTHROPOLOGY 105a. Ritual, Myth and Symbol

A study of the social dynamics of ritual behavior, mythology and symbolism in primitive society.

Mr. Jacopin

ANTHROPOLOGY 108b. Population, History and Society

Basic concepts of demography; human population changes in historical, social and ecological perspective; problems of effective population policy in the current world crisis. Coverage includes hunter/gatherers, early food-producers, modern industrial states, and "Third World" nations.

Mr. Cowgill

ANTHROPOLOGY 109b. Archaeological Methods

Basic archaeological procedures for reconnaissance, excavation, and analysis of data; some important aspects of primitive technology; a survey of recently developed instruments and techniques for finding, dating, and analyzing ancient materials; and problems in archaeological theory.

Mr. Zeitlin

ANTHROPOLOGY 110aR. Physical Anthropology

An introduction to the methods and materials of physical anthropology. A brief, intensive survey of non-primate and human evolution and fossil man. A study of human adaptation and the distribution of modern man in terms of morphology, genetics, geographical distribution, culture and environmental factors.

Mr. Gomberg

ANTHROPOLOGY 111a. Primates

An intensive introduction to the study of non-human primates with emphasis on ethology and primate behavior. An enquiry into the evolution of human behavior from a primate matrix, and the use of living non-human primates in understanding the nature of modern man.

Mr. Gomberg

ANTHROPOLOGY 112b. Evolution and Natural Selection

A course designed to present the history and modern theory of evolution. A basic understanding of how natural selection and evolution operate, including detailed examination of some of the basic mechanisms of evolution.

Mr. Gomberg

ANTHROPOLOGY 115a. Culture and Biology*ANTHROPOLOGY 120b. The Anthropology of Law**

A comparative study of the relationship between law, society and culture, including the socio-cultural contexts in which various types of legal institutions, procedures, rules and concepts are found and the relationship between law and change.

Mr. Davis

ANTHROPOLOGY 122aR. The World Before Civilization

An evolutionary examination of human societies prior to the development of urbanism, civilization, and the political state. Selected prehistoric hunting and gathering, pastoral and horticultural peoples will be studied in cross-cultural perspective with emphasis on subsistence technology, economy, social organization and political integration.

Mr. Zeitlin

ANTHROPOLOGY 123aR. Directions and Issues in Archaeology*ANTHROPOLOGY 126a. Kinship**

Kinship is a vital principle of social organization in all societies in the world. In our examination of this classic topic in anthropology we will look at kinship systems and structures in both small-scale and complex societies; marriage, residence, terminology, age and sex roles, descent group and alliance theories, methodological issues.

Mr. Jacopin

***ANTHROPOLOGY 128b. Origins of African Culture**

ANTHROPOLOGY 130b. The Archaeology of Syria-Palestine

See Classical and Oriental Studies 111b.

Mr. Todd

***ANTHROPOLOGY 131b. The Archaeology of Anatolia**

***ANTHROPOLOGY 132b. Neolithic Period in Cyprus**

***ANTHROPOLOGY 133a. Modern Africa**

ANTHROPOLOGY 134b. The Archaeology of Mesopotamia and Iran

See Classical and Oriental Studies 117b.

Mr. Todd

***ANTHROPOLOGY 135b. Peoples and Cultures of India**

ANTHROPOLOGY 139b. Culture and Biography

The classic problems of the individual in culture and society and the means by which culture and society exist and change through the thoughts and actions of individuals will be investigated through study of biographies and ethnographies recorded by anthropologists.

Ms. Codere

***ANTHROPOLOGY 140a. Prehistory of North American Indians**

ANTHROPOLOGY 141bR. The American Indian

A survey of the peoples and cultures of aboriginal North America.

Mr. Manners

***ANTHROPOLOGY 143b. Modern Culture of Middle America**

***ANTHROPOLOGY 144a. Indians of South America**

ANTHROPOLOGY 146a. Environment and Archaeology

An examination of principles and analytical techniques from ecology and geology which are applicable to archaeological interpretation.

Ms. Zeitlin

***ANTHROPOLOGY 147b. Archaeology and Ethnohistory of Mesoamerica**

ANTHROPOLOGY 148aR. Rise, Function and Fall of Early Civilizations: Concepts and Explanations

Important concepts and theories about early complex societies, including urbanization, state formation, and political, social, economic, ecological and ideological factors. Examples considered will be mainly from early Mesopotamia, Egypt, China, Mesoamerica and Peru.

Permission of instructor required.

Mr. Cowgill

ANTHROPOLOGY 151a. Social Organization I

Theories of social organization, the interrelations of social institutions, current anthropological methods of interpretation and analysis.

Mr. Jacobson

ANTHROPOLOGY 151b. Social Organization II

A continuation of 151a. This course will emphasize structural analysis. Designed primarily for advanced undergraduate and graduate students.

Mr. Jacopin

ANTHROPOLOGY 152bR. Economic Anthropology

Issues in the study of comparative economics with emphasis on non-industrial societies.

Mr. Kaplan

ANTHROPOLOGY 153a. Primitive Art

An anthropological approach to the graphic and plastic art of Africa, Oceania and North America. *Ms. Codere*

ANTHROPOLOGY 153bR. Ethnomusicology

See Music 180bR.

Mr. Kebede

***ANTHROPOLOGY 154aR. Comparative Religion**

***ANTHROPOLOGY 155b. Psychological Anthropology**

ANTHROPOLOGY 156a. Political Anthropology

A survey of major anthropological approaches to the study of politics.

Mr. Weingrod

ANTHROPOLOGY 158aR. Urban Anthropology

Comparative study of strategies used in coping with the complexity and potential danger of urban life. Attention will also be given to analyzing and evaluating the theories, methods and data anthropologists and others use in their studies of urban social organization.

Mr. Jacobson

***ANTHROPOLOGY 158b. Selected Topics in Urban Anthropology**

***ANTHROPOLOGY 159a. Anthropology and Contemporary Issues**

ANTHROPOLOGY 160b. An Anthropological Perspective on the Third World

Social, political and economic change in selected areas of the underdeveloped world.

Ms. Robinson

ANTHROPOLOGY 161bR. Culture and Cognition

An exploration of techniques used by anthropologists to discover and analyze cognitive systems (systems of meaning, categorization, and planning) in different cultures.

Ms. Irvine

***ANTHROPOLOGY 162a. Anthropology and Psychoanalysis**

***ANTHROPOLOGY 165a. Modernization and Social Change**

ANTHROPOLOGY 170a. Peasant Cultures: Past and Present

Comparative and historical study of peasantry, with emphasis on the relationship among city, rural community and the state.

Mr. Kaplan

ANTHROPOLOGY 171a. The Comparative Method

A survey of the comparative method in anthropology. Special emphasis will be given to selected problems, e.g., units of analysis, data quality control, measuring covariation, validity of premises in concept systems.

Mr. Hunt

ANTHROPOLOGY 172bR. Social Change in Israel

An analysis of recent social and political trends in Israeli society. Particular attention will be given to processes of social mobility, ethnic integration, and elite formation.

Mr. Weingrod

ANTHROPOLOGY 175a. Pro-Seminar in Anthropological Theory: I

Analysis of representative classics in anthropology.

Ms. Codere

ANTHROPOLOGY 175b. Pro-Seminar in Method in Cultural Anthropology: II

The development of anthropological theory, major present-day trends and their relation to problems of research.

Mr. Kaplan

***ANTHROPOLOGY 177b. Archaeological Method and Theory**

ANTHROPOLOGY 180b. Historical Anthropology

Ms. Codere

ANTHROPOLOGY 185a. Mathematical and Computer Methods in Archaeology

Mr. Cowgill

***ANTHROPOLOGY 186a. Seminar: Mathematical and Computer Methods in Archaeology**

ANTHROPOLOGY 188a. Materials in Ancient Societies: Ceramics

A seminar in archaeology whose theme is the role of different materials and technologies in the development of ancient societies; a major focus is on the way in which scientific analysis of archaeological artifacts and monuments can contribute to the interpretation of the cultures in which they were made. Subject matter will vary each year, e.g., metals, food production and diet, stone, and, this year, ceramics.

This seminar is given at M.I.T. under the auspices of the Center for Materials Research in Archaeology and Ethnology.

Messrs. H.N. Lechtman, A. Steinberg, W.E. Wetterstrom

ANTHROPOLOGY 188b. Laboratory in Materials in Ancient Societies

A laboratory to follow Anthropology 188a. The subject matter of the laboratory varies with the subject of the preceding term. As this year's seminar subject will be the role of the various ceramic materials in ancient societies so the laboratory will be concerned with the various methods used for the study of ceramics as well as giving students experience in working with both ancient and modern materials.

This seminar is given at M.I.T. under the auspices of the Center for Materials Research in Archaeology and Ethnology.

Messrs. H.N. Lechtman, A. Steinberg, W.E. Wetterstrom

***ANTHROPOLOGY 190a. Comparative Social Stratification**

Primarily for Graduate Students

ANTHROPOLOGY 210aR. Seminar on Conflict Resolution in Peasant Societies

An exploration of conditions and mechanisms involved in the generation and attempted resolution of social conflicts in selected peasant societies. Use will be made of Ms. Robinson's field data.

Ms. Robinson

ANTHROPOLOGY 210b. Special Topics in Anthropological Analysis:

Anthropology and the History of Ideas

Mssrs. Kaplan and Manners

***ANTHROPOLOGY 212a. Behavioral Anthropology I**

***ANTHROPOLOGY 212b. Behavioral Anthropology II**

ANTHROPOLOGY 226a and b. Readings in Research in Archaeology

Staff

- ANTHROPOLOGY 227a and b. Readings in Research in Linguistics** *Ms. Irvine*
- ANTHROPOLOGY 228a and b. Advanced Readings in Method and Theory**
Mr. Kaplan
- ANTHROPOLOGY 229a and b. Guided Comparative and Historical Research**
Ms. Codere and Mr. Hunt
- ANTHROPOLOGY 230a and b. Readings and Research on Culture of Hunters and Gatherers**
Mr. Jacopin
- *ANTHROPOLOGY 231a and b. Readings in Cognitive Culture**
- ANTHROPOLOGY 232a and b. Readings in Law** *Mr. Davis*
- ANTHROPOLOGY 233a and b. Readings in Kinship** *Mr. Jacopin*
- ANTHROPOLOGY 235a and b. Readings and Research in Latin American Cultures** *Mr. Hunt*
- ANTHROPOLOGY 236a and b. Readings and Research on East and South Asia**
Ms. Robinson
- ANTHROPOLOGY 237a and b. Readings and Research in African Cultures**
Mr. Jacobson
- ANTHROPOLOGY 238a and b. Readings and Research in Urban Anthropology**
Mr. Jacobson
- ANTHROPOLOGY 239a and b. Readings and Research in North American Indian Cultures** *Mr. Manners*
- ANTHROPOLOGY 245a and b. Readings and Research in Physical Anthropology**
Mr. Gomberg
- ANTHROPOLOGY 300b. Seminar in Anthropological Field Work**
Consideration of selected field studies. *Required of all graduate students.*
Mr. Hunt
- ANTHROPOLOGY 302. Summer Research Training**
Field work for three months during the summer under the supervision of a member of the staff. *Staff*
- ANTHROPOLOGY 304a and b. Readings and Research in Archaeological Field Methods** *Staff*
- ANTHROPOLOGY 400-410. Dissertation Research**
Independent research for the Ph.D. degree.
- | | | |
|--------------------------|-------------------------|--------------------------|
| 400. <i>Ms. Codere</i> | 404. <i>Mr. Gomberg</i> | 408. <i>Ms. Robinson</i> |
| 401. <i>Mr. Cowgill</i> | 405. <i>Ms. Irvine</i> | 409. <i>Mr. Saler</i> |
| 402. <i>Mr. Jacobson</i> | 406. <i>Mr. Manners</i> | 410. <i>Mr. Davis</i> |
| 403. <i>Mr. Hunt</i> | 407. <i>Mr. Kaplan</i> | |

BIOCHEMISTRY

Objectives

The graduate program in biochemistry leading to the degree of Doctor of Philosophy is designed to equip students with a broad understanding of the chemistry involved in biological processes and to train them to carry out independent original research. Although students will be primarily responsible for a comprehensive understanding of biochemical phenomena, they will be encouraged to acquaint themselves with the disciplines of biology and chemistry. Research and experimental projects rather than formal course training will be emphasized. The student will, however, be required to take courses in advanced biochemistry, organic chemistry, physical biochemistry, biochemical techniques, molecular biology and biochemistry seminars. The choice of advanced biochemistry courses and those of other scientific disciplines (i.e., organic chemistry, genetics, embryology, etc.) are subject to the student's particular interests. The choice of research programs should be in areas under investigation by the faculty; some of these fields include metabolic regulation in normal and also tumor tissues, enzymology, immunochemistry, molecular biology, molecular pharmacology, biochemical genetics, bacterial and phage genetics, physical chemistry of macromolecules, protein chemistry, plant and virus metabolism, problems in growth and differentiation, microbial metabolism, organic biochemistry, membrane transport and energy coupling mechanisms, application of NMR to biochemical problems, biochemistry of muscle, and chromosome structure.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of the catalog, apply here. Applicants for admission to the Biochemistry Department are also required to take the Graduate Record Examination. It is strongly suggested that the applicant take one of the advanced sections (preferably chemistry or biology) of this examination. The student's undergraduate curriculum should include some fundamental courses in biology and chemistry which will be subject to final staff approval.

Faculty

Professor Robert H. Abeles, *Chairman*: Mechanism of enzyme action, with particular reference to the mechanism of action of reactions involving derivatives of Vitamin B-12 and the mechanism of isomerizations. Design of highly specific enzyme inactivators.

Professor Gerald D. Fasman: Conformation of biological macromolecules. Chromatin structure, protein-DNA interactions. Protein models; synthesis and conformational studies of polyamino acids.

Professor David M. Freifelder: Structure and function of DNA. Bacterial and phage genetics. Lysogeny.

Professor William P. Jencks: Mechanisms of reactions catalyzed by enzymes, coenzymes, and by chemical catalysts. Effects of salt and denaturing agents on proteins. Mechanisms, catalysis and equilibria of reactions of "energy-rich" compounds of importance in biochemistry and chemistry.

Professor Lawrence Levine: Immunochemistry. Antibodies as analytical reagents for measuring antigen conformation and pharmacologically important molecules.

Professor John M. Lowenstein: Metabolic regulation of carbohydrate utilization and fat synthesis. The interaction of metabolic pathways. Regulation and function of the purine nucleotide cycle; regulation of adenosine production in heart.

Professor Susan Lowey: Structure and function of myofibrillar proteins and their relation to the muscle cell. Techniques will include physical chemistry, protein chemistry, fluorescence and electron microscopy.

Professor Alfred G. Redfield: Magnetic resonance in biopolymers. Physical biochemistry.

Professor Serge N. Timasheff: Physical chemistry of proteins, in particular, structure in solution and self-associations; self-assembling systems; ligand-mediated interactions; macromolecular properties of biological polymers.

Professor Helen Van Vunakis: Interaction of hallucinogenic, narcotic and carcinogenic compounds with specific antibodies and natural receptors. Protein structure. Photodynamic action of dyes on nucleic acids.

Associate Professor Thomas C. Hollocher, Jr.: Role and mechanism of action of oxidation-reduction enzymes. Mechanism of denitrification. Biochemical aspects of environmental problems.

Associate Professor William T. Murakami: Biochemistry of virus infection. Metabolism of virus-infected cells. Purification and characterization of animal viruses.

Associate Professor Robert F. Schleif: Molecular biology. Mechanism of regulation in bacteria and their viruses.

Associate Professor Morris Soodak: Aspects of the metabolism of the thyroid gland. Mechanism of iodination and the mode of action of the goitrogenic drugs are being investigated in cell-free preparations of thyroid tissues.

Assistant Professor Jen-Shiang Hong: Molecular biology of membrane functions and structure. Mechanism of active transport and oxidative phosphorylation in bacteria.

Assistant Professor Christopher Miller: Cellular physiology and biophysics. Membrane transport and mechanisms of electrical excitation.

Assistant Professor Pieter Wensink: Molecular biology. Gene expression during development of higher organisms. The physical arrangement of genes within the DNA and the chromosomes of higher organisms.

Degree Requirements

Doctor of Philosophy

Program of Study. Each doctoral candidate must satisfactorily complete the following fundamental courses: advanced biochemistry, biochemical techniques, physical biochemistry and biochemical research problems, and four of the biochemistry seminars.

Language Requirement. A reading knowledge of German is required. This language requirement must be completed satisfactorily prior to the oral qualifying examination.

Qualifying Examinations. An oral qualifying examination must be taken generally at the beginning of the second year. In this examination, the student will be asked to defend or refute two propositions. One proposition will be assigned in an area of research outside the student's immediate area of specialization, and one will be an original proposition put forth by the student for a research problem in his or her area of interest (this is not necessarily a problem upon which he or she will carry out research).

In addition, the student will have an opportunity to demonstrate general knowledge of biochemistry in a series of three area examinations: physical biochemistry and macromolecules, metabolism and enzymology, and molecular biology. Students are expected to have taken three examinations by the end of the third year; two of these

must be taken by the end of the second year. This general knowledge outside the student's own field of specialization must be demonstrated to the satisfaction of an advisory committee of four Department faculty members.

At this time it will be decided whether a student will continue working towards the Ph.D. degree or a Master of Arts degree.

Admission to Candidacy. At some time before the second semester of their third year, students will present to a committee of four members of the Department a summary of their research accomplished to date, including the most significant experimental data and detailed plans for the completion of a research project. The committee will recommend whether the research project should be continued as a partial fulfillment of the requirements for the Doctor of Philosophy degree. After completion of the research report and the three area examinations at a level satisfactory for the Ph.D. degree, the student will be admitted to candidacy.

Dissertation and Defense. A dissertation will be required which summarizes the results of an original investigation of an approved subject and which demonstrates the competence of the candidate in independent research.

Courses of Instruction

BIOCHEMISTRY 100a. Introductory Biochemistry

Chemistry, reactions and metabolism of biologically important compounds. Formation and utilization of "energy-rich" compounds. Introduction to enzyme mechanisms. An attempt will be made to interrelate and compare basic biochemical and chemical processes. Metabolic regulation.

Prerequisite: Chemistry 25a and b.

Section 1: *Messrs. Abeles and Jencks*

Section 2: *Mr. Lowenstein*

BIOCHEMISTRY 100aR. Introductory Biochemistry

See Biochemistry 100a.

Messrs. Wensink and Murakami

BIOCHEMISTRY 101a and b. Advanced Biochemistry

A discussion of enzyme reactions including energetics, kinetics, and reaction mechanism. Metabolism of carbohydrates, lipids, amino acids, nucleic acids, vitamins and coenzymes, hormones and inorganic substances. Coupled enzyme reactions, such as oxidative phosphorylation, and the synthesis of macromolecules such as glycogen, protein and the nucleic acids. Regulated enzymes and the regulation of metabolism.

Prerequisites: Chemistry 25a and b, Biochemistry 100a or their equivalent.

Mr. Abeles and Staff

BIOCHEMISTRY 103a. Advanced Molecular Biology

The fundamental principles of molecular biology will be stressed with respect to nucleic acid biosynthesis, structure, and physiological involvement. In addition, a description of events dealing with control of genetic information will be outlined.

Mr. Schleif

BIOCHEMISTRY 104b. Introduction to Physical Biochemistry

Discussion of physical methods; molecular weight measurements; polyelectrolyte properties; thermodynamics of macromolecular interactions; solvent effects; principles of folding; structural and conformational analyses of various spectroscopic and X-ray techniques, macromolecular interactions, magnetic methods.

Mr. Timasheff and Staff

BIOCHEMISTRY 200. Biochemistry Techniques

Prerequisite: Biochemistry 101. May be taken concurrently.

Mr. Miller and Staff

Seminars

One or two seminars will be given each semester. Each student will present an oral and written report on one aspect of the following topics:

BIOCHEMISTRY 216a. Molecular Biology of Higher Organisms

Mr. Wensink

BIOCHEMISTRY 217a. Topics in Plant Molecular Biology

Mr. Schleif

BIOCHEMISTRY 219b. Mechanisms of Enzyme Action

Messrs. Abeles and Jencks

BIOCHEMISTRY 228b. Physical Biochemistry: Structural Aspects

Messrs. Timasheff and Fasman, Ms. Lowey

BIOCHEMISTRY 401-418. Biochemical Research Problems

Independent research for the Ph.D. degree.

401. Mr. Jencks	408. Mr. Wensink	414. Mr. Murakami
402. Mr. Levine	409. Ms. Lowey	415. Mr. Schleif
404. Mr. Timasheff	410. Mr. Soodak	416. Mr. Redfield
405. Mr. Abeles	411. Ms. Van Vunakis	417. Mr. Hong
406. Mr. Fasman	412. Mr. Freifelder	418. Mr. Miller
407. Mr. Lowenstein	413. Mr. Hollocher	

Journal Club, Colloquia, and Research Clubs

In addition to the formal courses announced above, all graduate students are encouraged to participate in the Department's Journal Club and colloquia. The Journal Club is an informal meeting of the students, staff and post-doctoral fellows, at which recent publications are discussed. Colloquia are general meetings of the Department in which both speakers from the Department and guest speakers will present their current investigations. Research clubs are organized by various research groups of the Department.



BIOLOGY

Objectives

The graduate program in biology is designed to give students an understanding of the fundamental nature of living processes, and to train them to undertake original research.

The Department rarely admits a graduate student who desires a master's degree. Such candidates may, however, be admitted at the discretion of the faculty as exceptional cases. A Master of Arts degree may be granted on completion of a designated program to be arrived at after consultation with the graduate adviser.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. The student's undergraduate record should ordinarily include courses equivalent to those required of undergraduates concentrating in biology at this institution. These are: general biology, genetics, cell physiology, developmental biology, and at least two additional elective courses. Students who are deficient in some of these subjects, but whose records are otherwise superior, may make up their deficiencies while they are enrolled as graduate students. In exceptional cases, students may be excused from some of these requirements. Students with serious deficiencies must, however, expect to add additional time to their graduate program in order to satisfy the deficiencies.

It is strongly recommended that applicants take the Graduate Record Examination.

On being admitted to the Biology Department, graduate students will report to the temporary graduate student adviser who will assist the student with formal entry into the department and later with their programs.

An important part of graduate training consists of laboratory experience. Since the summer months provide an opportunity for such work, unbroken by courses and other responsibilities, it is customary for graduate students to spend their summers doing research. In recognition of this, the Biology Department provides summer stipends for its full-time graduate students.

Faculty

Professor Andrew G. Szent-Gyorgyi, *Chairman*: Mechanism of muscle contraction. Regulation of contractile proteins in both primitive and more advanced animals.

Professor Carolyn Cohen (Rosenstiel Center): Structure and function of protein assemblies in cells. X-ray diffraction and electron microscopy applied to muscle contraction, cell division and blood coagulation.

Professor Herman T. Epstein: Developmental changes in the brain in relation to learning in man and mouse.

Professor Chandler M. Fulton: Cell differentiation and selective gene expression in eucaryotic cells. Morphogenesis of cell shape and of cell organelles, especially flagella.

Professor Martin Gibbs (Photobiology Institute): Photosynthesis and plant physiology.

Professor Harlyn O. Halvorson (Director, Rosenstiel Center): Developmental changes in microorganisms. Control of macromolecular synthesis during the cell cycle and during sporulation in bacillus.

Professor Albert Kelner (Photobiology Institute): Genetics. Microbial genetics. Radiation biology.

Professor Alfred Nisonoff (Rosenstiel Center): Immunochemistry. Genetic control of the immune response.

Professor Jerome A. Schiff (Director, Photobiology Institute): Plant biochemistry and physiology. Photocontrol of intracellular development. Sulphur metabolism.

Associate Professor James E. Haber (Rosenstiel Center): Control of meiosis sporulation-specific events in the yeast *Saccharomyces cerevisiae*. Genetic and biochemical studies of macromolecular synthesis, especially during development.

Associate Professor Attila O. Klein: Regulation of development in higher plants by light. Control of growth, organelle development and macromolecular synthesis in the leaf.

Assistant Professor L. Edward Cannon (Rosenstiel Center): Structure and genetic control of antibodies. Primary structure and function of proteins.

Assistant Professor Jeffrey C. Hall: Genetic and histochemical mosaic analysis of behavior mutants of *Drosophila melanogaster*.

Assistant Professor John E. Lisman: Mechanisms of excitation and adaptation in photoreceptors.

Assistant Professor Eve E. Marder: Neurotransmitter-Receptor Interactions, using a combination of physiological, pharmacological and biochemical approaches.

Assistant Professor Joan L. Press (Rosenstiel Center): Developmental immunology.

Assistant Professor Bryan E. Roberts: Molecular biology of viruses and eucaryotic cells.

Assistant Professor Michael Rosbash (Rosenstiel Center): Gene organization in eucaryotes. Macromolecular synthesis during oogenesis.

Assistant Professor Robert D. Stout (Rosenstiel Center): Cellular immunology.

Assistant Professor Judith E. Tsipis: Virology.

Assistant Professor Lawrence J. Wangh: Control of gene activity, purification of estrogen receptors and Vitellogenin synthesis.

Assistant Professor Kalpana P. White: Developmental neurobiology.

Degree Requirements

At least one year of teaching experience is required of all degree candidates.

Master of Arts

Program of Study. The program leading to the M.A. degree in biology focuses primarily on the research capability of the student. Specifically, the primary requirement for the degree is the completion of a thesis based on original laboratory work which is acceptable to the Department. In general, the preparation for an original research problem will necessitate the enrollment of a student in course work. The specific number and types of courses will vary, depending on the ultimate research problem, and will be prescribed by the department. The candidate must, however, complete the equivalent of one full year of graduate study at Brandeis University, ordinarily computed at a minimum of eight half-courses of approved study.

By the end of the first year, each graduate student will choose a specific field of interest and will apply to the chairman of the department for a permanent adviser to be assigned by the department. This adviser will serve as the chairman of a committee of at least three departmental staff members, which will advise the student on courses to be taken and guide him or her throughout the thesis problem.

The thesis requirement may be waived under exceptional circumstances only with the approval of the department staff.

Language requirement. All candidates are required to demonstrate a reading knowledge of French, German, or another foreign language acceptable to the depart-

ment. An examination demonstrating reading ability in the foreign language must be taken prior to the completion of thesis work.

Qualifying Examination. At the discretion of the student's advisory committee, a qualifying or comprehensive examination may be required.

Doctor of Philosophy

Program of Study. All students will be expected to obtain a knowledge of the principles and techniques of the areas of genetics, morphology, physiology and development before taking the qualifying examination. The background a student is expected to have in these areas is equivalent to the course contents of Biology 101b, 200a and b, 202a, 204b, and Biochemistry 100a, 101. Entering students will be encouraged to take Biology 300a and b. The student will be expected also to have additional background in his or her area of specialization as well as experience in seminar and research courses to be designated.

Each student will choose his or her specific field of interest and will apply to the chairman of the department for a permanent adviser to be assigned by the department before the end of the second year. The adviser will assist the student in planning a well-balanced program in his or her specific field of interest. In addition, the adviser will ordinarily serve as the chairman of the student's proposition committee, proposition examining committee and dissertation examining committee.

Language requirement. A reading knowledge of French, German, or another language acceptable to the department, is required. This requirement must be met before the student completes the first year of graduate study.

Qualifying Examination. Ordinarily this examination will be taken on the recommendation of the student's adviser and should be completed before active dissertation work is initiated. The student's major adviser will appoint two other faculty members to serve as the student's proposition committee. The student will submit seven propositions encompassing the four core areas with no more than two propositions in any one area. Each proposition should be a proposal or hypothesis subject to debate. The proper form in which the propositions are to be submitted will be designated by the department. (See department secretary for suggested format and instructions.) The student will be examined orally on at least three of the seven acceptable propositions by the three members of the propositions committee plus two additional faculty members.

Admission to Candidacy. To be admitted to candidacy, the student must have (a) passed the foreign language examination, (b) passed the qualifying examination, (c) shown a capacity for independent research, (d) been accepted by a graduate adviser.

Dissertation and Defense. Each student will conduct an original investigation. *It is strongly recommended that the dissertation research be deferred until the student has fulfilled requirements for admission to candidacy.* With the approval of the student's adviser, however, research courses may be elected at any time. After admission to candidacy, a dissertation committee will be appointed by the chairman of the department. It will consist of at least three staff members headed by the student's permanent adviser. This committee must approve the candidate's subject of research, will guide his or her research activities toward the doctoral dissertation and, in addition, will read and evaluate the completed dissertation. After submission of the dissertation, the candidate will be expected to present the principal results of his or her work and its significance during an examination in defense of the dissertation.

Courses of Instruction

BIOLOGY 100a and b. Photobiology

See Photobiology 100 a and b.

Messrs. Gibbs, Kelner and Schiff

BIOLOGY 102b. Structural Biology

An introduction to the physical concepts underlying cell architecture and function. The first part of the course covers essential background including symmetry and assembly, methods of image formation (light and electron microscopy and X-ray diffraction), and protein structure. Biological systems then discussed will be protein assemblies governing cell form and division, muscle filaments and movement, membranes and chromatin. This course is designed for juniors and seniors majoring in the sciences and for first year graduate students.

Ms. Cohen

BIOLOGY 109b. Neurobiology of the Synapses

Topics in synaptic chemistry and physiology including aspects of the formation and modification of synapses during development and learning. These problems will be examined in nerve networks which organize behavior.

Ms. Marder

BIOLOGY 111b. Developmental Genetics

The course will focus on the contributions of genetic analysis to our understanding of developmental questions. Emphasis will be placed on areas currently under investigation. Among problems to be discussed are neural and epidermal pattern formation in insects, amphibia and mammals.

Ms. White

BIOLOGY 124bR. Animal Virology

A series of lectures and readings, with student participation, on some aspects of animal virology. Topics to be covered are: techniques and inhibitors used in virology; general survey of the structure and replication of the animal viruses; brief discussion of medical aspects of virology.

Ms. Tsipis

BIOLOGY 125a. Introductory Immunobiology

A discussion of the biological aspects of the immune response. Topics to be covered include antibody structure, function; properties and characteristics of the cells involved in cell-mediated immunity, transplantation immunity, allergy, and humoral immunity; tolerance and the cellular perception of self and non-self; generation of antibody diversity; regulatory mechanisms involved in cell interaction, including suppression and genetic control; and aspects of tumor immunity.

Mr. Stout

BIOLOGY 141aR. Physical Biology

This course will be a seminar on the biophysical aspects of development from the molecular level to the level of human behavior. The topics will be: molecular aspects of differentiation and development; cellular aspects of brain and behavior development in mice and men; genetic analysis of behavior, physiological aspects of behavior.

Prerequisites: Biology 21 and 31. Satisfactory grades in full year courses in Biology, Chemistry, Mathematics and Physics.

Mr. Epstein

BIOLOGY 150a. Gene Structure and Function

Contemporary investigation of the molecular structure of genes and gene products, especially in relation to eukaryotic gene expression and its regulation. There will be an emphasis on methodology, especially recombinant DNA technology, and on original research papers. Open to advanced undergraduates and

graduate students with background in genetics (e.g., Biology 21b and Biochemistry 100a).

Permission of instructor required.

Mr. Fulton

BIOLOGY 151b. The Structure and Function of Eukaryotic Chromatin

We will dissect eukaryotic chromatin through the careful reading of original research papers. Topics will include coiling of chromatin in chromosomes, transcription of lampbrush and polytene chromosomes, electron microscopic visualization of chromatin, histones, non-histone proteins, and DNA. Use of endonucleases for digestion of chromatin to nucleosomes and the separation of transcriptionally active and inactive chromatin will be discussed. This course is open to advanced undergraduates and graduate students with background courses in genetics, developmental biology, and biochemistry. This course logically follows Biology 150a and will make use of the knowledge gained in that course.

Permission of instructor required.

Mr. Wangh

BIOLOGY 168b. Topics in Animal Virology

Study of recent advances in animal virology with emphasis on papers appearing in the recent and current literature. Among topics to be considered are: retroviruses, paporaviruses, adenoviruses, herpesviruses, and slow virus diseases (scrapies, kuru, progressive multifocal leukoencephalopathy, subacute sclerosing panencephalopathy).

Permission of instructor required.

Ms. Tsipis

BIOLOGY 178a. Advanced Immunobiology

Recent advances in immunobiology. The format will include lectures to introduce the subject material and a detailed analysis with student participation of papers in the current literature. Topics which will be considered include: lymphocyte subsets-differentiation, heterogeneity, function, phenotypes, and antigen receptors; requirements for and mechanisms of lymphocyte activation by antigen; the regulatory mechanisms permitting/preventing immune responsiveness; genetic restrictions in lymphocyte interactions, with emphasis on the role of genes in the species' major histocompatibility complex; and the cellular basis for transplantation and tumor immunity.

Permission of instructor required.

Ms. Press

BIOLOGY 178b. Advanced Immunochemistry and Immunogenetics

Current advances in immunochemistry and immunogenetics. A portion of the course will consist of a discussion of papers in the current literature. Introductory lectures will be presented to permit an understanding of these papers. The topics to be considered include: the structural basis of antibody specificity; genetic control of antibody structure and biosynthesis with emphasis on current theories of antibody formation; the properties of genes controlling variable and constant regions of immunoglobulins; the presence of various classes of immunoglobulins on lymphocyte membranes and their role in triggering antibody synthesis; receptors on T and B cells including those involved in transplantation immunity; composition of the lymphocyte membrane and the role of various components in the stimulation of lymphocytes.

Prerequisites: Biology/Biochemistry 25, or Biology 125a.

Mr. Nisonoff

BIOLOGY 200a. Molecular and Cellular Basis of Development

This course will deal with possible mechanisms controlling gene expression in microorganisms and eukaryotic cells. Emphasis will be placed on control of eukaryotic cells during growth, differentiation and development. The participants will study specific papers in this area and their conclusions concerning the validity of the concepts and data will be discussed in a tutorial forum.

Mr. Hall

BIOLOGY 245a. Selected Topics in Plant Metabolism

See Photobiology 245a.

Mr. Gibbs

BIOLOGY 245b. Comparative Physiology and Biochemistry of Plants

See Photobiology 245b.

Mr. Schiff

Courses in Research

BIOLOGY 300a and b. Biological Research

Primarily for the first year student with the purpose of introducing him or her to biological research and to the work in progress in the laboratories of a number of faculty members. In consultation with the graduate adviser, the student plans a sequence of such tenures, each comprising six weeks or more, and then carries out experimental investigations under the guidance of the faculty members involved.

Staff

BIOLOGY 400. Biophysics of Microorganisms

Mr. Epstein

BIOLOGY 401. Structure and Genetic Control of Antibodies

Primary Structure and Function of Proteins.

Mr. Cannon

BIOLOGY 402. Molecular Biology of Microorganisms

Mr. Halvorson

BIOLOGY 403. Immunochemistry: Genetic Control of the Immune Response

Mr. Nisonoff

BIOLOGY 404. Developmental Neurobiology

Ms. White

BIOLOGY 405. Cell Differentiation and Morphogenesis

Mr. Fulton

BIOLOGY 406. Neurophysiology

Ms. Marder

BIOLOGY 407. Structural Aspects of Contractile Systems, Cell Division and Blood Coagulation

Ms. Cohen

BIOLOGY 408. Behavioral Genetics

Mr. Hall

BIOLOGY 409. Biophysics of Visual Transduction

Mr. Lisman

BIOLOGY 410. Plant Development

Mr. Klein

BIOLOGY 411. Gene Control in Vitellogenin

Mr. Wangh

BIOLOGY 413. General Physiology

Mr. Szent-Gyorgyi

BIOLOGY 414. Gene Organization in Eukaryotes. Macromolecular Synthesis During Oogenesis	<i>Mr. Rosbash</i>
BIOLOGY 415. Biochemistry and Genetics of Differentiation	<i>Mr. Haber</i>
BIOLOGY 416. Molecular Biology of Viruses and Eukaryotic Cells	<i>Mr. Roberts</i>
BIOLOGY 417. Cellular Immunology	<i>Mr. Stout</i>
BIOLOGY 418. Developmental Immunology	<i>Ms. Press</i>

Biology Journal Clubs

There will be a number of informal Journal Clubs which will deal with various topics of concern to the various specialties. These will meet regularly under the auspices of the staff. Students, depending upon their individual needs, may be required to attend.

INSTITUTE FOR PHOTOBIOLOGY OF CELLS AND ORGANELLES

Objectives

The graduate program of the Institute is designed to give students an understanding of the photobiology of cells and organelles as part of the fundamental nature of living processes, and to train them to undertake original research in these areas.

The Institute rarely admits a graduate student who desires a master's degree. Such candidates may, however, be admitted at the discretion of the faculty as exceptional cases. A Master of Arts degree may be granted on completion of a designated program to be arrived at after consultation with the graduate adviser.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. The student's undergraduate record should ordinarily include courses equivalent to those required of undergraduates concentrating in biology or biochemistry at this institution. These are: general biology, genetics, cell physiology and biochemistry, developmental biology, and at least two additional elective courses. Students who are deficient in some of these subjects but whose records are otherwise superior, may make up their deficiencies while they are enrolled as graduate students. In exceptional cases, students may be excused from some of these requirements. Students with serious deficiencies, must, however, expect to add additional time to their graduate program in order to satisfy the deficiencies.

It is strongly recommended that applicants take the Graduate Record Examination.

On being admitted to the Institute, graduate students will be advised and aided in planning their programs.

An important part of graduate training consists of laboratory experience. Since the summer months provide an opportunity for such work, unbroken by courses and other responsibilities, it is customary for graduate students to spend their summers doing research.

Faculty

Professor Jerome A. Schiff, Director: Plant biochemistry and physiology. Photo-control of intracellular development. Sulphur metabolism.

Professor Martin Gibbs: Photosynthesis and plant physiology.

Professor Albert Kelner: Genetics. Microbial genetics. Radiation biology.

Degree Requirements

At least one year of teaching experience is required of all degree candidates.

Master of Arts

Program of Study. The program leading to the M.A. in biology focuses primarily on the research capability of the student. Specifically, the primary requirement for the degree is the completion of a thesis based on original laboratory work which is acceptable to the Institute. In general, the preparation for an original research problem will necessitate the enrollment of a student in course work. The specific number and types of courses will vary, depending on the ultimate research problem, and will be prescribed by the Institute. The candidate must, however, complete the equivalent of one full year of graduate study at Brandeis University, ordinarily computed at a minimum of eight half-courses of approved study.

By the end of the first year, each graduate student will choose a specific field of interest and will apply to the Director of the Institute for a permanent adviser to be assigned by the Institute. This adviser will serve as the chairman of a committee which will advise the student on courses to be taken and guide him or her throughout the thesis problem.

The thesis problem may be waived under exceptional circumstances and only with the approval of the Institute staff.

Language Requirement. All candidates are required to demonstrate a reading knowledge of French, German, or other foreign language acceptable to the Institute. An examination demonstrating reading ability in the foreign language must be taken prior to the completion of thesis work.

Qualifying Examination. At the discretion of the student's advisory committee, a qualifying or comprehensive examination may be required.

Doctor of Philosophy

Program of Study. All students will be expected to obtain a knowledge of the principles and techniques of the areas of genetics, morphology, physiology and biochemistry, and development, as well as courses in physics, and chemistry related to photobiology, before taking the qualifying examination. The student will be expected also to have additional background in his or her area of specialization as well as experience in seminar and research courses to be designated.

Each student will choose his or her specific field of interest and will apply to the Director of the Institute for a permanent adviser to be assigned by the Institute before the end of the second year. The adviser will assist the student in planning a well-balanced program in his or her specific field of interest. In addition, the adviser will ordinarily serve as the chairman of the student's proposition committee, proposition examining committee and dissertation examining committee.

Language Requirements. A reading knowledge of French, German or another language acceptable to the Institute is required. This requirement must be met before the student completes the first year of graduate study.

Qualifying Examination. Ordinarily this examination will be taken on the recommendation of the student's adviser and should be completed before active dissertation work is initiated. The student's major adviser will appoint two other faculty members to serve as the student's proposition committee. The student will submit four propositions encompassing the four core areas with no more than two propositions in any one area. Each proposition should be a proposal or hypothesis subject to debate. The proper form in which the propositions are to be submitted will be designated by the Institute. The student will be examined orally on at least three of the acceptable propositions by the three members of the propositions committee plus additional faculty members as needed.

Admission to Candidacy. To be admitted to candidacy, the student must have (a) passed the foreign language examination, (b) passed the qualifying examination, (c) shown a capacity for independent research, (d) been accepted by a graduate adviser.

Dissertation and Defense. Each student will conduct an original investigation. *It is strongly recommended that the dissertation research be deferred until the student has fulfilled requirements for admission to candidacy.* With the approval of the student's adviser, however, research courses may be elected at any time. After admission to candidacy, a dissertation committee will be appointed by the Director of the Institute. It will consist of at least three staff members headed by the student's permanent adviser. This committee will guide his or her research activities toward the doctoral dissertation and will read and evaluate the completed dissertation. After submission of the dissertation, the candidate will be expected to present the principal results of his or her work and its significance during an examination in defense of the dissertation.

Courses of Instruction

PHOTOBIOLOGY 100a and b. Photobiology of Cells and Organelles

Basic photobiology including an introduction to the physical and chemical concepts involved, the influence of the changing solar spectrum on the course of evolution, the catalytic uses of light by living systems including photoperception (phototropism, phototaxis and the evolution of visual systems), photomorphogenesis (blue light and re-far red systems), photoinduced rhythms, and other biological responses to light, energy storage including the photosynthetic apparatus, membranes and reaction centers, photosynthetic electron transport and phosphorylation, photosynthetic carbon metabolism and photoreduction, utilization of assimilatory power in reductive reactions, the deleterious effects of light including photodynamic action, photoprotection, erythema effects, ultraviolet damage to the genetic material and its photorepair and the evolution of repair systems and medical applications.

Prerequisites: Cell biology or its equivalent. Permission of the instructor.

Messrs. Gibbs, Kelnner and Schiff

***PHOTOBIOLOGY 140b. DNA Repair: Its Genetic and Evolutionary Aspects**

PHOTOBIOLOGY 245a. Selected Topics in Plant Metabolism

A discussion of those areas of physiology and biochemistry to which plants lend themselves as experimental objects. Conspicuous examples are photosynthesis, photomorphogenesis, nitrogen fixation, and the biosynthesis of natural products such as anthocyanins, flavonoids, isoprenoids, phenols, terpenes, etc.

Prerequisite: Permission of the instructor.

Mr. Gibbs

PHOTOBIOLOGY 245b. Comparative Physiology and Biochemistry of Plants

A continuation of Photobiology 245a.

Prerequisite: Permission of the instructor.

Mr. Schiff

PHOTOBIOLOGY 401. Photobiological Aspects of Genetics and Microbiology	<i>Mr. Kelner</i>
PHOTOBIOLOGY 406. Photobiology and Plant Physiology	<i>Mr. Schiff</i>
PHOTOBIOLOGY 412. Photobiochemistry and Plant Metabolism	<i>Mr. Gibbs</i>

Institute Journal Clubs

There will be a number of informal Journal Clubs which will deal with various topics of concern to the various specialties. These will meet regularly under the auspices of the staff. Students, depending upon their individual needs, may be required to attend.

BIOPHYSICS

Objectives

The interdepartmental graduate program in biophysics, leading to the degree of Doctor of Philosophy, is designed to provide a broad background in the physics and chemistry of living processes and to develop the students' capacity for independent research. The program offers opportunity for study and research in biophysical chemistry, cellular physiology, molecular genetics, photobiology, psychophysics and structural biology. Applicants are expected to have strong backgrounds in physical science with undergraduate concentrations in biology, chemistry, mathematics, physics or engineering.

Admission

The general requirements for admission to the Graduate School are given in an earlier section of this catalog. Applications should include, in addition to letters of reference, a personal statement giving reasons for choosing biophysics and indicating areas of interest. Applicants are required to take the Graduate Record Examination and are encouraged to visit Brandeis for interviews, if possible.

Faculty Advisory Committee

Professor David J. DeRosier (Physics), *Chairman*; Assistant Professor John E. Lisman (Biology), Professor Henry Linschitz (Chemistry), Professor Serge N. Timasheff (Biochemistry).

The faculty of the Biophysics Program is composed of members of the Biochemistry, Biology, Chemistry and Physics departments. About twenty faculty members participate in this graduate program.

Degree Requirements

Doctor of Philosophy

Program of Study. Since Biophysics is a very broad field and students may have widely different backgrounds and goals, the course of study is flexible. During the first year students take Biophysics 300, a course in which students meet with selected faculty members to explore areas of research. Students are also required to successfully complete Biophysics 200b. In addition, students generally complete the following courses: Advanced Biochemistry (Biochemistry 101a), Introduction to Physical Biochemistry

(Biophysics 104b), Structural Biology (Biophysics 102b) and Biophysical Optics (Biophysics 101a). Courses to complete the student's program will depend on the student's background and interests. The additional courses can be in the areas of biochemistry, biology, biophysics, chemistry, mathematics, photobiology or physics.

Language Requirements. Reading knowledge of two foreign languages, chosen from French, German and Russian. A knowledge of computer programming may be substituted for the second language.

Admission to Candidacy. Students are admitted to candidacy on the basis of academic performance and on research proposals that they develop and defend, generally during the second year of study. Students must pass Biophysics 200b in order to qualify for admission to candidacy.

Dissertation and Defense. Each doctoral candidate will submit a dissertation describing his or her research and will be required to defend it in a Final Oral Examination.

Courses of Instruction

BIOPHYSICS 100a and b. Photobiology of Cells and Organelles

See Photobiology 100a and b.

Messrs. Gibbs, Kelner and Schiff

BIOPHYSICS 101a and b. Biophysical Optics

The first term covers the theory of optics and the design and operation of modern imaging instruments used in biophysical research. The topics include geometric optics, image formation, wave phenomena and diffraction, telescopy, electron microscopy, and photography.

The second term covers one or two biophysical methods in much greater detail. X-ray crystallography of proteins and optical diffraction and filtering of electron micrographs are typical of the topics covered.

Mr. DeRosier

BIOPHYSICS 102b. Structural Biology

See Biology 102b.

Ms. Cohen

BIOPHYSICS 104b. Introduction to Physical Chemistry

See Biochemistry 104b

Mr. Timasheff and Staff

BIOPHYSICS 152b. Biological Assembly

See Physics 152b.

Mr. Caspar

BIOPHYSICS 200b. Seminar in Biophysical Research

A required seminar for Biophysics majors which will deal with current biophysical research. Emphasis is on the understanding, critical evaluation and use of scientific literature. Students will discuss topics from the areas of biophysical chemistry, cellular physiology, molecular genetics, photobiology, and structural biology, based on the reading of significant articles. In consultation with the faculty, each student will develop a research proposition based on independent reading and will prepare a research plan in the form of a thesis proposal.

Open to graduate students in other sciences with permission of the instructor.

Mr. Caspar

***BIOPHYSICS 229b. Special Topics in Inorganic Chemistry: Introduction to X-ray Structure Determination**

***BIOPHYSICS 231b. Molecular Aspects of Membrane Phenomena**

BIOPHYSICS 300. Introduction to Research in Biophysics

Students carry out a project in the research laboratory of one of the faculty members. Projects and faculty are selected from the departments of biochemistry, biology, chemistry and physics and the Institute of Photobiology. At least three terms of Biophysics 300 are required. *Staff*

CHEMISTRY

Objectives

The graduate program in chemistry, comprising course work, seminar participation, and research, is designed to lead to a broad understanding of the subject. The graduate program leads to the M.A. and Ph.D. degrees in chemistry. The Ph.D. is offered with specializations in inorganic, organic, physical and physical-organic chemistry and in chemical-physics. (Detailed information on the interdisciplinary specialization in chemical physics is found on page 67). All students will be required to demonstrate knowledge in advanced areas of inorganic, organic and physical chemistry. The doctoral program is designed to be flexible so that individual programs of study may be devised to satisfy the particular interests and needs of each student. In each case this program will be decided by joint consultation between the student and the Departmental Committee of Graduate Studies and the thesis supervisor when selected. The doctoral program will normally include a basic set of courses in the student's own area of interest, to be supplemented by advanced courses in chemistry and, where appropriate, in biochemistry, biology, mathematics and physics.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. In addition, the undergraduate curriculum of applicants should include courses in physics and mathematics (differential and integral calculus), and courses in general and inorganic, analytical, organic and physical chemistry.

Admission to advanced courses will be based upon results of a qualifying examination in each of these areas of chemistry, which will be taken upon entrance. These examinations will determine if the student shall be required to make up deficiencies in preparation. The results of the qualifying examinations will be considered in the assignment of awards for the subsequent years of graduate study and in determining a student's eligibility to continue in a degree program.

Faculty

Professor James B. Hendrickson, Chairman: Synthesis of natural products; synthesis design systematics and development of new synthetic reactions.

University Professor Saul G. Cohen: Chemistry of free radicals; organic photochemistry; specificity and mechanism of reactions of enzymes.

- Professor Paul B. Dorain:** Electron paramagnetic resonance; exchange interactions, electron phonon interactions and optical spectra of crystalline materials.
- Professor Sidney Golden:** Quantum theory of chemical kinetics; many body problems and atomic and molecular structure; statistical mechanics of ion solvation; physical chemistry of metal-ammonia solutions; equilibrium and time-dependent quantum statistical inequalities; exact time-dependent quantum properties.
- Professor Ernest Grunwald:** Infrared laser chemistry; electronic spectra of vibrationally excited molecules; protonic conduction in polymer films; solvation in polar liquid solutions.
- Professor Kenneth Kustin:** Study of fast reactions in solution by relaxation techniques; mechanisms of inorganic reactions; bioinorganic chemistry.
- Professor Henry Linschitz:** Reactions of excited molecules; stabilization of free radicals; photo-ionization in solution; properties of solvated electrons; metal complexes; physical mechanisms of photobiological processes.
- Professor Myron Rosenblum:** Chemistry of organometallic complexes of the transition elements. New methods in organic synthesis employing organometallic complexes.
- Professor Colin Steel:** Chemistry of excited molecules and radicals; the kinetics and mechanisms of photochemical and thermal reactions.
- Professor Robert Stevenson:** Isolation and structure of natural products; lignan synthesis; molecular rearrangements in triterpenoids and steroids.
- Visiting Professor Avner Treinin:** Spectroscopy and photochemistry of ions in solution; free radical reaction kinetics.
- Associate Professor Iu-Yam Chan:** Optically detected magnetic resonance, time resolved magnetic resonance, EPR and ENDOR.
- Associate Professor Irving R. Epstein:** Use of quantum mechanics to elucidate molecular properties; theoretical approaches to Compton scattering; borane and carborane chemistry; oscillating chemical reactions and biochemical kinetics.
- Associate Professor Bruce M. Foxman:** X-ray structure determination; chemical, physical and crystallographic studies of solid-state reactions.
- Associate Professor Michael J. Henchman:** Gas kinetics under "single collision" conditions; dynamics of molecular collision processes.
- Associate Professor Peter C. Jordan:** Statistical mechanical theory of cooperative phenomena; non-equilibrium statistical mechanics and thermodynamics; applications of quantum mechanics to molecular spectroscopy.
- Associate Professor Philip M. Keehn:** Synthetic methods; organic synthesis of strained rings and theoretically interesting molecules; applications of nmr spectroscopy to organic systems; photooxidation; pure and applied laser systems.
- Associate Professor Thomas R. Tuttle, Jr.:** Chemistry of liquid solutions; the composition and structures of species in metal solutions in polar solvents; application of spectroscopy, e.g., magnetic resonance, optical and spectropolarimetry, to elucidation of the composition and structure of solutions.

Degree Requirements

Detailed information on the interdisciplinary specialization in chemical physics is found on page 67.

Entering students may be admitted to either the master's or the doctoral program.

All candidates for advanced degrees are required to meet the following requirements:

Qualifying Examination. These examinations are set twice a year, in September and January, and are based on the undergraduate chemistry curriculum. Students are required to take and are expected to pass qualifying examinations in organic, inorganic-analytical and physical chemistry during their first year.

Recommendations with respect to the first-year course of study will be based on the performance on the qualifying examinations. Admission to the graduate degree programs will be based on the student's record in course work during the first year and the performance on the qualifying examinations.

Language Requirements. Each student is obliged to demonstrate a useful reading knowledge of scientific French, German or Russian within the first two years of residence.

Seminar. Each student in residence is required to attend and participate in the seminar in his or her chosen area of concentration throughout the period of graduate study.

Teaching. It is expected that all graduate students will do some undergraduate teaching during the course of their studies.

Master of Arts

Program of Study. Each candidate is required to complete successfully one year of study at the graduate level in chemistry, or, with prior permission of the Departmental Graduate Studies Committee, in related fields. The program will include laboratory work and, normally, six semester courses at the graduate level. The detailed program of study will be one jointly arrived at by the candidate and the Graduate Studies Committee to reflect the candidate's area of interest as well as a perspective of other areas.

Residence Requirements. The minimum residence requirement for the M.A. degree is one year.

Doctor of Philosophy

Program of Study. A balanced program of study will be prepared jointly by the student and the Departmental Graduate Studies Committee. This will normally include a basic core of course work in the student's area of interest and later more specialized courses appropriate to it. It is expected that doctoral students will choose a research adviser during the first year, normally in the second semester. A student who satisfactorily completes the first year of study in the doctoral program qualifies for the master's degree.

Admission to Candidacy. A student is recommended for admission to candidacy for the doctoral degree upon certification by his or her thesis adviser and the Graduate Studies Committee that the student has satisfied the qualifying and language examination requirements and has made satisfactory progress in the program of study, research and the final Ph.D. examinations.

Final Examinations. The graduate student must demonstrate proficiency by taking final examinations in his or her major field: organic, physical-organic, physical, or inorganic chemistry. In organic chemistry, students are required to pass six cumulative examinations, given monthly on unannounced topics. Students normally begin these examinations after they begin research and are expected to maintain reasonable progress toward completion. In physical-organic chemistry, final examinations are administered twice a year and are based on assigned readings. Students must pass three of

these examinations and must maintain satisfactory progress toward this end. In physical chemistry and inorganic chemistry, generally during the third semester of graduate work, the student is assigned a set of propositions. In physical chemistry the set consists of three propositions; the student takes a written examination on one proposition and is examined orally on the remaining two. In inorganic chemistry the student is assigned two propositions; he or she takes a written examination on one proposition, and is examined orally on his or her proposed research project and the remaining proposition.

Residence Requirements. The minimum residence requirement for the Ph.D. degree is two years.

Dissertation and Defense. A dissertation is required which describes the results of an original investigation and which demonstrates the competence of the candidate in independent investigation, critical ability and effectiveness of expression. An oral defense of the dissertation will be held.

Courses of Instruction

*CHEMISTRY 110b. Instrumental Chemical Analysis

CHEMISTRY 121a. Inorganic Chemistry I, Lectures

Introduction to the principles of chemical binding; valence theory, periodic properties, symmetry, ionic and molecular structures. Application chiefly to the chemistry of the transition elements.

Prerequisite: Satisfactory grade in an undergraduate course in physical chemistry.
Three lecture hours a week. *Mr. Foxman*

*CHEMISTRY 129b. Inorganic Chemistry Laboratory

*CHEMISTRY 130a. Advanced Organic Chemistry: Structure

CHEMISTRY 131a. Advanced Organic Chemistry: Topics in Structure and Reactivity

Topics to be announced.

To be announced

CHEMISTRY 132b. Advanced Organic Chemistry: Spectroscopy

Application of physical and spectroscopic methods to the elucidation of structure and stereochemistry of organic compounds.

Prerequisite: Satisfactory grade in Chemistry 130a or permission of instructor.

Mr. Keehn

CHEMISTRY 133a. Advanced Organic Chemistry: Mechanisms

Kinetics, stereochemistry and mechanisms of selected organic reactions.

Prerequisites: Satisfactory grade in undergraduate courses in organic and physical chemistry. *Mr. Cohen*

*CHEMISTRY 134b. Advanced Organic Chemistry: Synthesis

CHEMISTRY 141a. Advanced Physical Chemistry I

Thermodynamics and statistical thermodynamics. Properties of real systems: gases phase stability, chemical equilibrium, and solutions. Statistical equilibrium, ensembles, and fluctuations.

Prerequisite: Satisfactory grade in an undergraduate course in physical chemistry.

Mr. Jordan

CHEMISTRY 141b. Advanced Physical Chemistry I

Irreversible thermodynamics and chemical kinetics. Entropy production, reciprocal relations, microscopic reversibility and regression of fluctuations. Active transport, relaxation kinetics and oscillating reactions. Solution kinetics including enzyme reactions. Gas kinetics and theories of elementary processes. Microscopic kinetics: energy transfer and collision dynamics.

Prerequisite: Satisfactory grade in Chemistry 141a and permission of instructor.
Mr. Henchman

CHEMISTRY 142bR. Advanced Physical Chemistry II

Quantum mechanics: waves and wave packets, operator methods, Schrodinger's equation, simple model systems, angular momenta, perturbation theory and variational principle.

Prerequisite: Satisfactory grade in an undergraduate course in physical chemistry.
Mr. Tuttle

CHEMISTRY 143aR. Advanced Physical Chemistry II

A continuation of Chemistry 142b. Quantum chemistry: spin, atomic and molecular structure, spectroscopy, chemical binding, advanced topics.

Prerequisite: Satisfactory grade in Chemistry 142b or the equivalent. *Mr. Golden*

***CHEMISTRY 144a. Structure and Spectroscopy**

Staff

BIOCHEMISTRY 100a. Introductory Biochemistry

See Biochemistry 100a.

Section 1: *Messrs: Abeles and Jencks*

Section 2: *Mr. Lowenstein*

BIOCHEMISTRY 100aR. Introductory Biochemistry

See Biochemistry 100a.

Messrs. Wensink and Murakami

CHEMISTRY 200. Advanced Chemistry Laboratory

Staff

CHEMISTRY 220c. Inorganic Chemistry Seminar

Required of graduate students in inorganic chemistry, who must audit this course each year.

Staff

CHEMISTRY 221a. Advanced Inorganic Chemistry I**CHEMISTRY 222b. Advanced Inorganic Chemistry II*****CHEMISTRY 229b. Special Topics in Inorganic Chemistry****CHEMISTRY 231c. Organic Chemistry Seminar**

Required of graduate students in organic chemistry, who must audit this course each year.

Staff

CHEMISTRY 232bR. Chemistry of Heterocyclic Compounds

A systematic survey of the principal oxygen, nitrogen and sulfur heterocycles of five and six membered and fused ring systems, including their synthesis, chemical reactions and aromatic character.

Prerequisite: Satisfactory grade in Chemistry 131 or equivalent. *Mr. Hendrickson*

***CHEMISTRY 233b. The Biosynthesis of Natural Products**

CHEMISTRY 234b. Chemistry of Organometallic Compounds

Prerequisite: Satisfactory grade in Chemistry 130a or equivalent. *Mr. Rosenblum*

***CHEMISTRY 235a. Special Topics in Organic Chemistry: Synthesis Design**

***CHEMISTRY 235b. Special Topics in Organic Chemistry**

***CHEMISTRY 237b. The Chemistry of Organic Natural Products**

CHEMISTRY 240c. Physical-Organic Chemistry Seminar

Required of graduate students in physical-organic chemistry, who must audit this course each year. *Staff*

CHEMISTRY 241c. Physical Chemistry Seminar

Required of graduate students in physical chemistry, who must audit this course each year. *Staff*

***CHEMISTRY 244a. Special Topics in Physical Chemistry**

***CHEMISTRY 244b. Special Topics in Physical Chemistry**

CHEMISTRY 245aR. Physical Organic Chemistry

A quantitative discussion of rates and equilibria of organic reactions.

Mr. Grunwald

CHEMISTRY 250c. Chemical Physics Seminar

Required of graduate students in chemical physics who must audit this course each year. *Staff*

The following courses are given every three to five years or when there is sufficient student interest:

***CHEMISTRY 122b. Inorganic Chemistry II, Lectures**

***CHEMISTRY 123b. Nuclear Chemistry**

***CHEMISTRY 221a. Advanced Inorganic Chemistry I**

***CHEMISTRY 243a. Statistical Thermodynamics**

***CHEMISTRY 248a. Advanced Quantum Chemistry**

CHEMISTRY COLLOQUIUM

Lectures by faculty and invited speakers. Required of all graduate students. *Non-credit.*

Courses in Research

CHEMISTRY 400. Organic Chemistry and Physical Organic Chemistry

Reaction mechanisms; photochemistry; enzyme reactions; free radicals.

Mr. Cohen

CHEMISTRY 401. Organic Chemistry

Chemistry of natural products; steroids, triterpenoids, bisarylpropanoids, benzofurans.

Mr. Stevenson

CHEMISTRY 403. Organic Chemistry

Chemistry of organometallic complexes of the transition elements. New methods in organic synthesis employing organometallic complexes.

Mr. Rosenblum

CHEMISTRY 404. Organic Chemistry

Synthesis of natural products; stereochemistry and molecular geometry; development of new synthetic reactions.

Mr. Hendrickson

CHEMISTRY 405. Physical Chemistry

Chemical kinetics of elementary reactions; statistical theory of atomic and molecular structure; statistical mechanics of electrolytic solutions; physical chemistry of metal-ammonia solutions; equilibrium and time-dependent quantum statistical inequalities; exact time-dependent quantum properties.

Mr. Golden

CHEMISTRY 406. Physical Chemistry

Reactions of excited molecules; luminescence; electron solvation; metal complexes; physical mechanisms of photobiological processes.

Mr. Linschitz

CHEMISTRY 407. Physical and Inorganic Chemistry

Electron paramagnetic resonance; optical spectra; solid state chemistry.

Mr. Dorain

CHEMISTRY 408. Physical Chemistry

Faraday effect of small ions in solution. The study of chemical equilibria and processes by means of magnetic resonance spectroscopy. Optical spectra of metal solutions in polar solvents.

Mr. Tuttle

CHEMISTRY 409. Inorganic Chemistry

Kinetics and mechanisms of inorganic reactions; experimental study of fast reactions by the temperature-jump and other relaxation techniques; trace metals in marine organisms.

Mr. Kustin

CHEMISTRY 411. Physical Chemistry

Chemistry of excited molecules and radicals; the kinetics and mechanisms of photochemical and thermal reactions.

Mr. Steel

CHEMISTRY 412. Physical and Physical Organic Chemistry

Infrared laser chemistry; electronic spectra of vibrationally excited molecules; protonic conduction in polymer films; solvation in polar liquid solutions.

Mr. Grunwald

CHEMISTRY 413. Physical Chemistry

Theory of fluids; theory of non-equilibrium processes; properties of ferrofluids; analysis of molecular spectra.

Mr. Jordan

CHEMISTRY 414. Physical Chemistry

Cross-sections, dynamics and lifetimes of ion-neutral collision processes in the gas phase using beam techniques; charge transfer; reactions of solvated ions.

Mr. Henchman

CHEMISTRY 415. Physical Chemistry

Quantum mechanical calculations of molecular properties; molecular momentum distributions; Compton scattering and X-ray diffraction; photochemistry, oscillating chemical reactions and biochemical kinetics; borane and carborane chemistry.

Mr. Epstein

CHEMISTRY 416. Physical Chemistry

Application of optically detected magnetic resonance, time resolved magnetic resonance, EPR and ENDOR to the investigation of organic triplet state molecules and inorganic crystals containing ions and/or color centers.

Mr. Chan

CHEMISTRY 417. Organic Chemistry

Organic synthesis of strained ring and theoretically interesting molecules; synthetic methods; application of nuclear magnetic resonance spectroscopy to organic systems; photooxidation; thermal chemistry; pure and applied laser chemistry of organic systems.

Mr. Keehn

CHEMISTRY 419. Inorganic Chemistry

X-ray structure determination; reactions in crystals; kinetics, mechanisms, and crystallography of rearrangement, polymerization, and decomposition reactions in the solid-state.

Mr. Foxman

Ph.D. in Chemistry with Specialization in Chemical Physics

The graduate program in chemical physics is an interdisciplinary specialization designed to meet the needs of students who wish to prepare themselves for the study of scientific problems using the methods and theories of modern physics and physical chemistry. This objective is attained by (1) formal course work in chemistry, physics and, possibly, mathematics; (2) participation in relevant graduate seminars; (3) a program of supervised research involving chemical physics; (4) independent study.

The program is designed to be flexible in providing individual programs of study to satisfy the particular interests and needs of each student. Final programs of study and research will be jointly arrived at by the student, his or her research supervisor and the Chemical Physics Committee. Only candidates for the Ph.D. will be accepted.

Admission

The general requirements for admission to the Graduate School apply to candidates for admission to the graduate program in chemical physics. Applicants should have a strong undergraduate background in chemistry, physics and mathematics.

Degree Requirements

All candidates for the Ph.D. degree in Chemistry with specialization in chemical physics must meet the following requirements:

Qualifying Examinations. Each student is expected to demonstrate a satisfactory knowledge of undergraduate chemistry, physics and mathematics by the performance in three qualifying examinations; one each in physical chemistry, organic or inorganic/analytical chemistry and physics/mathematics. These examinations are set two times a year, in September and January. Results of these examinations will be used as an aid in constructing the student's initial program of course work and will be considered by the Chemical Physics Committee in evaluating the student's progress.

Language Requirements. Each student is required to demonstrate a useful reading knowledge of scientific French, German or Russian within the first two years of residence.

Seminar. Each student in residence is required to attend and to participate in the Chemical Physics Seminar. Participation in other seminars in physics and chemistry is also recommended.

Teaching. It is expected that all graduate students will do some undergraduate teaching during the course of their studies.

Master of Arts

No master's degree is offered with specialization in chemical physics, but students who satisfy the appropriate requirements will be eligible for the M.A. degree in chemistry.

Doctor of Philosophy

Program of Study. It is expected that some candidates for the Ph.D. degree in chemistry with specialization in chemical physics may require a longer period of time in course work than will students in either of the fields of physics or chemistry. In general, the program for the Ph.D. in chemistry with specialization in chemical physics will include eight semester graduate courses: four in physical chemistry, one in either organic or inorganic chemistry and three in physics. No specific course work in mathematics is required, but students are expected to be familiar with the techniques necessary for the proper pursuit of their research. In addition, each student is expected to demonstrate a knowledge of elementary computer programming.

Students may satisfy their program's course requirements in part or in entirety by passing (or giving evidence of ability to pass) the final examination in the appropriate number of such courses. Courses in areas related to chemistry and physics may also be considered by the Chemical Physics Committee in partial fulfillment of the requirements.

Admission to Candidacy. Students are recommended for admission to candidacy for the doctoral degree upon certification by their thesis adviser and the Chemical Physics Committee that they have satisfied the qualifying and language examination requirements and have made satisfactory progress in the program of study, research and the final Ph.D. examination.

Final Examinations. Final examinations in chemical physics are generally taken during the third semester of graduate work. The student is assigned a set of three propositions; the student takes a written examination on one proposition and is examined orally on the remaining two.

Residence Requirements. The minimum residence requirement for the Ph.D. degree is two years.

Dissertation and Defense. A dissertation is required which describes the results of an original investigation and which demonstrates the competence of the candidate in independent investigation, critical ability and effectiveness of expression. An oral defense of the dissertation will be held.

CLASSICAL AND ORIENTAL STUDIES

ORIENTAL STUDIES PROGRAM

Objectives

The program of studies aims at preparing the student for teaching and research in the history, languages and archaeology of the ancient civilizations of the Nile valley, western Asia and the Aegean.

The program has a twofold purpose: first, to train students who wish to specialize in these areas of study; second, to offer an opportunity to students in other fields to integrate with their own studies the courses given in the Department.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this program.

Students planning to enter this Department should take as much Hebrew, Greek and Latin as possible during their undergraduate study. They should also make every effort to achieve a sight reading knowledge of French and German before embarking on graduate study.

Faculty

Professor Leonard C. Muellner, *Chairman*: Greek language and literature.

Professor Louis V. Žabkar, *Director of Graduate Studies*: Egyptian language, history and archaeology.

Professor Douglas J. Stewart: Greek language and philosophy.

Associate Professor Ian A. Todd: Aegean and Near Eastern archaeology.

Assistant Professor Martha A. Morrison: Cuneiform studies. Mesopotamian history, language.

Degree Requirements

Master of Arts

Program of Study. Each candidate for the master's degree is required to complete satisfactorily not less than eight semester-courses in the department, plus any additional course work that the major professor may prescribe. While an exceptionally well prepared student may fulfill the requirements for the degree in one year, two years of study will normally be required. Master's examinations will not be administered before the end of the second year of residence except by special permission of the department. All students, whatever their principal area of specialization, will be required to study in all three major areas covered by the department, namely, language, history, and archaeology.

Language Requirement. The candidate must demonstrate a reading proficiency in French or German, and competence in at least one ancient language. Certain areas of specialization will require the knowledge of additional languages.

Qualifying Examinations. The student must demonstrate, in written and oral examinations, proficiency in two major areas of the program.

Doctor of Philosophy

Program of Study. The requirements are the same as for the Master of Arts degree, plus eight additional semester-courses in the department.

Language Requirement. The candidate must demonstrate a reading knowledge of two modern foreign languages, ordinarily French and German, and competence in at least one ancient language. Certain areas of specialization will require the knowledge of additional languages.

Qualifying Examinations. The student must demonstrate, in written and oral examinations, proficiency in two major areas of the program. A thorough competence must be demonstrated in the field of concentration as well as proficiency in another area of the program elected by the student.

Admission to Candidacy. A student shall be eligible for admission to candidacy upon completing the language requirements and satisfactorily passing the written and oral qualifying examinations.

Dissertation and Defense. The dissertation must be a significant and original contribution to scholarship demonstrating a capacity for independent research based on primary sources. The completed dissertation shall be read and found acceptable by its director and two other readers, one of whom must be a member of another department or from another academic institution. The candidate must defend the dissertation successfully in a Final Oral Examination.

Courses of Instruction

CLASSICS

CLASSICS 104b. Hesiod's *Theogony*: Convergent Approaches of Classics and Anthropology

See Anthropology 104b.

Messrs. Jacopin and Muellner

GREEK 180b. Hesiod, *Theogony* Seminar

A close study of the oldest systematic treatment of myth and cult in European literature.

Mr. Stewart

ARCHAEOLOGY

***CLORS 110. Early Prehistoric Archaeology of the Near East**

***CLORS 111b. The Archaeology of Syria-Palestine**

***CLORS 116a. The Archaeology of Cyprus**

CLORS 117b. The Archaeology of Mesopotamia and Iran

The Neolithic and Bronze Ages.

Mr. Todd

***CLORS 119. The Archaeology of the Aegean**

CLORS 120b. Archaeological Methods

See Anthropology 109b.

Mr. Zeitlin

***CLORS 121a. Directions and Issues in Archaeology**

See Anthropology 123a.

Mr. Zeitlin

***CLORS 122. The Archaeology of Anatolia**

***CLORS 124b. The Neolithic Period in Cyprus**

***CLORS 125b. The Neolithic Period in Anatolia**

***CLORS 129b. Alexandria: The City and the Idea**

CLORS 130a. Mathematical and Computer Methods in Archaeology

See Anthropology 185a.

Mr. Cowgill

***CLORS 131a. Seminar: Mathematics and Computer Applications in Archaeology**

CLORS 135b. The Bronze Age in Cyprus

An examination of archaeological sites and material in the three main phases of the period, with emphasis on the major problems presented by the archaeological record.

Mr. Todd

CLORS 146a. Environment and Archaeology

See Anthropology 146a.

Ms. Zeitlin

HISTORY

CLASSICS 101a. Greek History

The political, social, economic and cultural history of Greece from the Bronze Age to Alexander the Great.

To be announced

CLASSICS 101b. Topics in Greek History

A detailed study of all aspects of the career of Alexander based upon a close study of ancient sources (in translation). This course will be run as a seminar, but no prior study of Greek history will be presumed. Topics will change each year, and the course may be repeated for credit.

To be announced

CLASSICS 102a. Roman History

The political and social history of Rome from its founding to the time of Constantine, with emphasis on the period from the Gracchi to Nero.

Mr. Higgins

CLASSICS 102b. Topics in Roman History: Pagan and Christian Thought in the Late Roman Empire

A study of intellectual and artistic responses to the crisis of Rome and the transition from the Antique to the Middle Ages.

Messrs. Higgins and Gaehde

***CLORS 145b. History of Ptolemaic Egypt**

CLORS 148aR. Rise, Function and Fall of Early Civilizations: Concepts and Explanations

See Anthropology 148aR.

Mr. Cowgill

CLORS 149aR. The World Before Civilization

See Anthropology 122aR.

Mr. Zeitlin

CLORS 150. History of Egyptian Civilization

Political and cultural history of ancient Egypt from the early dynastic times to the end of the Graeco-Roman period, with special emphasis on art, architecture and literature.

Mr. Žabkar

***CLORS 151b. History of Egypt Under Roman Rule**

***CLORS 162b. History of Meroitic Civilizations**

***CLORS 165. History of Mesopotamia**

CLORS 166a. Topics in Mesopotamian History: Second Millennium B.C.

This course will draw on archaeological and textual evidence to examine the history of the Hurrians and their impact on the ancient Near East.

Ms. Morrison

CLORS 167b. Topics in Mesopotamian History: First Millennium B.C.

The Aramaeans of the Second and First Millennia B.C. will be studied from Mesopotamian and Syro-Palestinian sources.

Ms. Morrison

***CLORS 168a. The Hellenistic Period in Mesopotamia**

LANGUAGES

***CLORS 108b. Comparative Grammar of Semitic Languages**

AKKADIAN 101. Elementary Akkadian

Intensive study of Akkadian based on the grammars of Ungnad and von Soden. Readings in the Code of Hammurabi and related material.

Ms. Morrison

***AKKADIAN 102a. Advanced Akkadian I: Assyrian Royal Inscriptions**

***AKKADIAN 102b. Advanced Akkadian II: Literary Texts**

AKKADIAN 103. Advanced Akkadian III: Second Millennium Texts

Prerequisite: Akkadian 101.

Ms. Morrison

***AKKADIAN 104a. Advanced Akkadian IV: Wisdom Literature**

ARABIC 101. Introductory Literary Arabic

See NEJS 101.

Mr. Levy

ARABIC 102. Intermediate Literary Arabic

See NEJS 102.

Mr. Levy

***COPTIC 101. Coptic Language**

EGYPTIAN 101. Elementary Egyptian

A study of Middle Egyptian based on Gardiner's grammar. The principal texts to be read are those included in Blackman's *Middle Egyptian Stories* and de Buck's *Readingbook*. In the second term some Middle Egyptian hieratic is read.

To be announced

*EGYPTIAN 102. Advanced Egyptian I: Selected Texts of the Ptolemaic Period

EGYPTIAN 103. Historical Inscriptions of the 18th Dynasty

Prerequisite: Egyptian 101.

Mr. Žabkar

*EGYPTIAN 104. Advanced Late Egyptian: Texts of the Ramesside Period

*EGYPTIAN 105. Advanced Egyptian II: Old Egyptian

*EGYPTIAN 106. Advanced Egyptian III: Egyptian Wisdom Texts

*EGYPTIAN 107. Advanced Egyptian IV: Egyptian Hymns and Poems

*HITTITE 101. Elementary Hittite

*SUMERIAN 101. Elementary Sumerian

CLORS 301-306. Directed Readings

301. *Mr. Žabkar*

304. *Mr. Stewart*

302. *Mr. Todd*

305. *Mr. Muellner*

303. *Ms. Morrison*

306. *Mr. Higgins*

CLORS 401-406. Dissertation Research

401. *Mr. Žabkar*

404. *Mr. Stewart*

402. *Mr. Todd*

405. *Mr. Muellner*

403. *Ms. Morrison*

406. *Mr. Higgins*

COMPARATIVE HISTORY

Objectives

The graduate program in comparative history, leading to the degree of Doctor of Philosophy in History, aims to train students in the comparative approach that comprises the best tradition in historical scholarship. Comparative history builds on the development of expertise in a specific field — in this program usually early modern or modern European history — but it also involves the conceptualization and study of the past according to political, social, economic, cultural, intellectual and psychological categories that transcend parochial national or period divisions.

Through wide though carefully focused readings, students are encouraged to develop the ability to make cross-cultural comparisons across the five continents and the span of recorded time. Thus, for example, students of social mobility, institutional change, the clash of ideologies, or the organization of the state will deepen their understanding of how different cultures approach, define, and resolve the issues at hand. The formal program focuses, above all, on the comparative history of Western Europe, but

students will find a structured opportunity to examine the patterns of American civilization as well, and to study for comparative purposes Eastern Europe, Latin America, Africa, and the Near and Far East.

The program is designed to help students to cope with the competitive academic environment of the next decade by training them rigorously in methods of historical research and writing, by equipping them to teach the whole range of European history from the Renaissance to the present, and by fostering the intellectual flexibility and interdisciplinary skills that command a premium outside the academic marketplace.

A small, select student body will work in close cooperation with the faculty. All instruction will take place in seminars and tutorials. From the beginning, individual programs of study will be developed to prepare students for their qualifying examinations and to guide them toward their dissertation research. Upon entrance, students will declare an intention to take qualifying examinations either in the early modern period (1450-1789) or the modern period (1715 to the present). Formal faculty offerings at present concentrate upon the modern period.

During the first year, students will enroll in a graduate colloquium that focuses on comparative problems of modern European history and American civilization. They will prepare, through the year, one seminar paper of publishable quality on a topic chosen in consultation with a major adviser. Specialized training in historiography will be offered. Students will allot the rest of their program to tutorials tailored to their individual needs. Before taking the qualifying examination, students must successfully complete three such tutorials, including one focusing on an era outside their period of specialization, and another focusing on a part of the world geographically removed from their area of specialization.

For the qualifying examination, students will demonstrate a mastery of two fields of expertise in western history (and of non-western parallels where appropriate), either in early modern or modern history. The fields of expertise will be chosen from such broad categories as social, economic, intellectual, cultural, political or international history.

Students should normally plan to complete all work for the doctorate, including the dissertation, within four years after entering the program; prolongation of study past the sixth year is discouraged.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of the catalog, apply to candidates for admission to this program. Students with a sound preparation in history and who have demonstrated unusual imagination and critical insight will receive special consideration. Undergraduate majors in the other social sciences or in allied fields such as comparative literature may, however, apply. Applicants should submit a sample of written work, preferably in European history. Only doctoral candidates will be accepted into the regular program. Unusually well-qualified students with distinguished records who wish to obtain a master's degree in modern history and public affairs before going on to further training in such fields as law, business, diplomacy, social work, journalism or medicine, or who have already earned degrees in these fields, may be admitted to a special program.

Faculty

Associate Professor Stephen A. Schuker, *Chairman*: Modern diplomatic, economic, political and business history.

Professor Geoffrey Barraclough: Modern and contemporary history. Political institutions. Historiography. Medieval history.

Professor David S. Berkowitz: Early modern history. Bibliography, humanism, the Reformation and political thought.

Professor Rudolph Binion: Modern history. Culture and thought. Psychohistory. Political and social thought.

Professor Eugene C. Black: Modern history. Political and social institutions.

Professor John P. Demos: Early modern history. Social institutions.

Professor David H. Fischer: Modern history. Social institutions.

Professor Morton Keller: Legal and political institutions.

University Professor Frank E. Manuel: Modern European intellectual history.

Professor Marvin Meyers: Ideas and politics.

Professor Milton I. Vanger: Modern Latin American history. Political institutions.

Associate Professor Gregory L. Freeze: Modern history. Eastern Europe. Political and social institutions.

Associate Professor John E. Schrecker: Modern Asian history. Nationalism. Imperialism.

Assistant Professor Mark Cummings: Early modern history. Social institutions.

Assistant Professor Alexander Keyssar: Labor and working-class history.

Lecturer Karen Freeze: Eastern Europe.

Degree Requirements

Master of Arts

An M.A. degree in History will be awarded to those students who have satisfactorily completed one year of residence at full time, fulfilled the language requirement and have passed a special examination at the master's level. Students who have completed the Ph.D. qualifying examinations and the stated requirements for the master's degree automatically qualify for conferral of the master's degree.

Doctor of Philosophy

Each student will be assigned to a member of the faculty who will be a period supervisor. In addition, students will work independently with other assigned faculty members who will help define the category field.

Program of Study. During the first two years in the program, students will take the joint European history-American civilization colloquium, complete a major research paper, fulfill the three tutorial requirements, and attend seminars in historiography and comparative history. In addition, they will prepare for the Ph.D. qualifying examination.

The third year in the program will, when feasible, be spent abroad pursuing research for the dissertation. Arrangements can be made for conferences with foreign scholars who can advise on the subject of the research.

Language Requirement. The use of foreign languages is an essential tool for the comparative historian. Each student will be expected to pass at least one language examination upon admission, the second one before registration for the third semester. All students are required to present French and German; the chairman of the program may impose an additional requirement when a particular student's research specialty

requires it. The examinations will test the student's ability to read standard historical prose without a dictionary.

Qualifying Examination. Each student is expected to take the qualifying examination at the end of the second year of study. Any student who has failed to complete the qualifying examination by the sixth semester will be dropped from the program.

Admission to Candidacy A student may be admitted to candidacy for the Ph.D. degree when he or she has completed course and residence requirements, demonstrated proficiency in the required foreign languages, passed the qualifying examination and gained approval of his or her dissertation topic by the faculty of the program.

Dissertation and Defense. The student will normally define a dissertation topic in the term preceding the qualifying examination but in no case later than the end of the fifth semester in the program. When the student's dissertation committee accepts the completed dissertation, the candidate must defend it at a final oral examination.

Courses of Instruction

Seminars

HISTORY 200a. Colloquium in American and European Comparative History Since the 18th Century

Comparative examination of major historical issues in Europe and the United States from the eighteenth through the twentieth centuries. *Required of first-year graduate students in the Comparative History and the History of American Civilization Programs.*
Mr. Schuker

HISTORY 200b. Historiography

A critical analysis of classical historiography. *Required of first-year graduate students in the Comparative History and History of American Civilization programs.*
Messrs. Barraclough and Fischer

COMPARATIVE HISTORY 301a and b — 311a and b. Research papers

301a and b.	Mr. Barraclough	307a and b.	Mr. Schrecker
302a and b.	Mr. Berkowitz	308a and b.	Mr. Vanger
303a and b.	Mr. Binion	309a and b.	Mr. Freeze
304a and b.	Mr. Black	310a and b.	Mr. Manuel
305a and b.	Mr. Demos	311a and b.	Mr. Cummings
306a and b.	Mr. Fischer		

COMPARATIVE HISTORY 321a and b — 331a and b. Period Field Reading

321a and b.	Mr. Barraclough	327a and b.	Mr. Schrecker
322a and b.	Mr. Berkowitz	328a and b.	Mr. Vanger
323a and b.	Mr. Binion	329a and b.	Mr. Freeze
324a and b.	Mr. Black	330a and b.	Mr. Manuel
325a and b.	Mr. Demos	331a and b.	Mr. Cummings
326a and b.	Mr. Fischer		

COMPARATIVE HISTORY 341a and b — 351a and b. Category Field Reading

341a and b.	Mr. Barraclough	347a and b.	Mr. Schrecker
342a and b.	Mr. Berkowitz	348a and b.	Mr. Vanger
343a and b.	Mr. Binion	349a and b.	Mr. Freeze
344a and b.	Mr. Black	350a and b.	Mr. Manuel
345a and b.	Mr. Demos	351a and b.	Mr. Cummings
346a and b.	Mr. Fischer		

COMPARATIVE HISTORY 401 — 411. Dissertation Research

401. <i>Mr. Barraclough</i>	407. <i>Mr. Schrecker</i>
402. <i>Mr. Berkowitz</i>	408. <i>Mr. Vanger</i>
403. <i>Mr. Binion</i>	409. <i>Mr. Freeze</i>
404. <i>Mr. Black</i>	410. <i>Mr. Manuel</i>
405. <i>Mr. Demos</i>	411. <i>Mr. Cummings</i>
406. <i>Mr. Fischer</i>	

COMPARATIVE HISTORY 500. Registration in Time

In addition, the following courses may be taken as equivalent to Comparative History seminars.

HISTORY 123bR. The Reformation	<i>Mr. Cummings</i>
HISTORY 126aR. Revolutions and Absolutism in Early Modern Europe	<i>Mr. Cummings</i>
HISTORY 130a. The French Revolution	<i>Mr. Black</i>
HISTORY 130b. Jews, Catholics and Protestants in Western Europe 1517-1867	<i>(Messrs. Ravid and Cummings)</i>
HISTORY 131bR. Topics in Modern Social History	<i>Mr. Black</i>
HISTORY 132a. Intellectual History of Modern Europe (1637-1857)	<i>Mr. Binion</i>
HISTORY 132b. Intellectual History of Modern Europe, 1857 to the Present	<i>Mr. Binion</i>
HISTORY 133a. The Enlightenment	<i>Mr. Manuel</i>
HISTORY 133b. Topics in 19th and 20th Century Intellectual History	<i>Mr. Manuel</i>
HISTORY 136aR. Europe and the Wider World, 1870-1919	<i>Mr. Binion</i>
HISTORY 136bR. Europe and the Wider World, 1914 to the Present	<i>Mr. Schuker</i>
HISTORY 138b. Empires, Nationalism and Revolution in Eastern Europe, 1815-1948	<i>Ms. K. Freeze</i>
HISTORY 147a. Rise of Imperial Russia	<i>Mr. Freeze</i>
HISTORY 147b. History of Russia Since 1861	<i>Mr. Freeze</i>
*HISTORY 148a. Revolutionary Russia, 1890-1917	
HISTORY 148b. Seminar on Imperial Russia	<i>Mr. Freeze</i>
HISTORY 174aR. The Contemporary Novel and Latin American Reality	<i>Messrs. Rosser and Vanger</i>
HISTORY 182bR. Modern Southeast Asian History	<i>Mr. Steinberg</i>
HISTORY 185b. The Coming of War, 1936-1941	<i>Mr. Barraclough</i>

HISTORY 191aR. History and Psychology

Mr. Demos

HISTORY 197a. Introduction to Comparative History: Topics in Intellectual History

Mr. Binion

HISTORY 198b. Science and Technology in the 20th Century

Mr. Schweber

COMPARATIVE LITERATURE

See Joint Program of Literary Studies (page 94).

CROSS-REGISTRATION AT BOSTON COLLEGE, BOSTON UNIVERSITY AND TUFTS UNIVERSITY

A full-time graduate student at Brandeis University may enroll in one graduate course at Boston College, Boston University or Tufts University. Brochures suggesting courses for cross-registration at each of the host institutions are available at the graduate school office of each institution.

A student who wishes to enroll in a course at one of these institutions should consult with the instructor in the particular course and should expect to satisfy the prerequisites and requirements normally required for admission to that course, including adherence to the academic calendar of that course.

A student at Brandeis University who wishes to enroll in a graduate course at one of the host institutions should obtain a registration permit from the Graduate School Registrar and should present this permit to the Graduate School Registrar of the host institution.

ECONOMICS

Although the University does not offer graduate study in Economics, it does offer a significant group of upper-level courses which may be of interest to graduate students in other departments. These courses receive graduate credit on permission of the student's adviser.

Courses of Instruction

ECONOMICS 22a. American Economic History

Mr. Evans

ECONOMICS 32bR. Comparative Systems

A critical evaluation of major kinds of economic organization. Included are market economies, centrally planned capitalism, market socialism and centrally directed socialist economies.

Prerequisite: Economics 8b.

Mr. Berliner

ECONOMICS 37aR. The Political Economy of Cities

This course will consist of a formal analysis of the structure of metropolitan areas and an exploration of the set of economic and social problems that have beset city life.

Mr. Filer

ECONOMICS 57a. The Economics of Environmental Resources

This course will deal with insights from economic theory into the optional pricing and usage of both renewable and nonrenewable natural resources. Emphasis will be placed on questions of environmental policy. *Mr. Filer*

ECONOMICS 68bR. The History of Economics I

The development of economic analysis from the physiocrats to the beginning of the marginalist revolution in the 1870's. Reading is in the works of the economists themselves rather than secondary texts.

Prerequisites: Economics 80 or permission of instructor.

Mr. Weckstein

ECONOMICS 71aR. Financial Markets

The evaluation and selection of investment assets, portfolio composition, the operation of markets for financial assets and the role of specialized financial firms.

Prerequisite: ECON 8b.

Mr. Friedman

ECONOMICS 74b. Law and Economics

A study of economic foundations of American law in selected areas of interest. Topics will include: the role of property rights and liability rules in the control of externalities; controlling the cost of accidents; the control of criminal behavior; product failure and damage; medical malpractice. The effects of judgments and statutes will be studied.

Prerequisite: ECON 2a.

Mr. Weckstein

ECONOMICS 75aR. The Economics of Underdeveloped Countries

The economic circumstances of poor countries and their special problems: misfit technologies, income inequality, urban unemployment, and the terms of their participation in the world economy. Their policy options and the roles for rich countries are studied.

Prerequisite: Economics 8b.

Mr. Weckstein

ECONOMICS 76bR. Labor Economics

This course will focus on two areas: (1) the operation of labor markets including labor supply, labor demand, unemployment, training and labor mobility; and (2) trade unionism and collective bargaining in the United States.

Prerequisite: ECON 2a.

Mr. Filer

ECONOMICS 80a. Microeconomic Theory

A study of the theory of resource allocation in a market system: consumer behavior, the firm, factors of production and income distribution, general equilibrium, welfare and market failure.

Prerequisite: ECON 8b.

Section 1: Mr. Pulley

Section 2: Mr. Braunstein

ECONOMICS 80aR. Microeconomic Theory

Mr. Pulley

ECONOMICS 82b. Macroeconomic Theory

The meaning of the national income concepts; the factors determining the level of national income, employment and prices; the influence of fiscal and monetary policies; theory of economic growth.

Prerequisite: ECON 8b.

Section 1: Mr. Lima

Section 2: Mr. Dolbear

ECONOMICS 82bR. Macroeconomic Theory

Mr. Lima

ECONOMICS 83a. Statistics for Economic Analysis

The first course in statistical inference. Topics include descriptive statistics, probability theory, testing hypotheses, analysis of variance, correlation and regression.

Prerequisite: ECON 2a.

*Section 1: Mr. Pulley
Section 2: Mr. Dolbear*

ECONOMICS 83aR. Statistics for Economic Analysis

Mr. Pulley

ECONOMICS 84b. Econometrics

An introduction to the construction and testing of econometric models. Single and multiple equation models will be treated with special emphasis on the analysis of economic time series.

Prerequisite: ECON 80a, 82b, 83a.

Mr. Braunstein

ECONOMICS 134bR. The Public Sector

The theory of government and collective activity; the effects of taxation on efficiency and equity; problems of cost and choice in government expenditures.

Prerequisite: ECON 80a.

Mr. Dolbear

ECONOMICS 136b. Managerial Economics

Mr. Lima

ECONOMICS 150aR. Social Economics

Mr. Berliner

ECONOMICS 190b. Advanced Topics in Economic Theory and Policy

This course builds upon and extends the basic core of economic theory and policy developed in ECON 80a and 82b. Readings will be selected from professional journals. Recommended for students who are considering graduate work in economics or management.

Prerequisite: ECON 80a, 82b, 83a.

Mr. Schwalberg

ECONOMICS 182a. Recent Development in Macroeconomics

Current controversy and research in macro-economic policy. Special topics include: long-run properties of short-run models, bridging the micro-macro gap, expectations, international influences and some theories of the business cycle.

Prerequisites: Economics 80, 82.

Mr. Williams

ECONOMICS 185bR. Input-Output Analysis

Theory and implications of static and dynamic input-output and related systems to national, international, regional and interregional problems; impact analysis, feasibility studies, planning and forecasting; data and computations.

Prerequisite: Economics 82b or permission of instructor.

Ms. Carter

ENGLISH AND AMERICAN LITERATURE

Objectives

The graduate program in English and American literature is designed to offer training in the interpretation and evaluation of literary texts with some attention to the related scholarly disciplines, particularly history and linguistics. It also offers

candidates who have some ability in writing an opportunity to pursue this interest as a normal part of the graduate program.

Admission

Candidates for admission should have a bachelor's degree, preferably with a major in English and American literature, and a reading knowledge of French, Italian, German, Greek, or Latin. The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to this area of study.

Faculty

Professor John H. Smith, *Chairman*: Shakespeare. Renaissance drama. Neo-Latin literature.

University Professor J. V. Cunningham: Renaissance literature. Poetry.

Professor Allen Grossman: Poetry and poetic structures. Seventeenth century literature. Modern and contemporary literature.

Professor Victor Harris: Seventeenth century literature.

Professor Milton Hindus: American literature. Modern literature.

Professor Benjamin B. Hoover: Eighteenth century literature.

Professor Ray S. Jackendoff: Linguistics. Semantic theory. Music.

Professor Robert O. Preyer: Nineteenth century literature. Social and intellectual history.

Professor Peter Swiggart: American literature. Criticism theory.

Professor Aileen Ward: Nineteenth century literature.

Visiting Professor F. T. Prince: Renaissance poetry.

Associate Professor Michael T. Gilmore: Puritanism. Literature of the American Revolution. American renaissance.

Associate Professor Karen W. Klein: Medieval literature. Women's studies.

Associate Professor Alan L. Levitan: Shakespeare. Music and drama.

Associate Professor Richard J. Onorato: Romantic literature. Modern literature.

Associate Professor Susan Staves: Restoration and eighteenth century literature.

Assistant Professor Judith Ferster: Medieval literature.

Assistant Professor Philip Fisher: Nineteenth century literature. Critical theory.

Assistant Professor Alan Lechuk: Fiction. Nineteenth century literature.

Assistant Professor Joan M. Maling: Linguistics. Syntactic theory. Historical syntax. Metrics.

Assistant Professor Thomas J. Wolf: Romantic poetry. Pastoral tradition. Classical influences on romantic and modern poetry.

Lecturer (with rank of Assistant Professor) Jane B. Grimshaw: Linguistics.

Degree Requirements

Following are the degree requirements for the Department of English and American Literature. Students should also consult the Academic Regulations and General Degree Requirements sections on pages 17 and 20.

Master of Arts

Program of Study. Each student will take English 200a. In addition, a normal program will consist of five courses, at least three of which will be 200-level seminars. All programs must be approved by the student's adviser and by the Director of Graduate Studies.

Residence Requirement. The minimum residence requirement is one year, though students with inadequate preparation may require more.

Language Requirements. A reading knowledge of a major foreign language (modern European, ancient Greek, or Latin). The completion of the language requirements at another university does not exempt the student from the Brandeis requirement.

Qualifying Examination. An oral examination, by committees of faculty members, will be given at the beginning of the spring term on one of several major texts, the texts to be announced at the end of the fall term. This examination will test a student's ability to read and understand a major literary work or a group of short works by the same author. Admission to the Ph.D. program in addition to qualification for the M.A. degree will depend upon the results of this examination, in addition to course evaluation.

Doctor of Philosophy

Admission to the Ph.D. Program. (1) Students who complete, with distinction, the M.A. requirements at Brandeis University are admitted to the Ph.D. program by the Department upon recommendation of the Committee on Graduate Studies.

(2) Students who enter with a master's degree or a full year of graduate work in English from another university are required to fulfill the qualifying examination requirement described above under the Master of Arts Program. Provided this requirement is fulfilled, such students may, at the Department's discretion, be admitted to the Ph.D. program after successful completion of a semester at Brandeis and upon recommendation by the Committee on Graduate Studies. At the time of admission, up to a year's residence and course credit for work completed elsewhere may be granted.

Program of Study. After admission to the Ph.D. program, each student will plan a program of study with a faculty adviser of his or her choice; each such program must be approved by the Director of Graduate Studies. For the student not given credit for graduate work elsewhere, a normal program of study will include at least four graduate level courses in the student's second year. A student is expected to complete graduate work with a knowledge of the various historical periods and genres of English and American literature, and the program that is chosen should reflect this goal.

Pre-dissertation Examination. All candidates for the Ph.D. will be asked to pass an oral examination in the historical period or genre in which the candidate expects to write a dissertation. This examination is normally taken in the semester following satisfaction of the residence requirement, but it may be postponed upon approval by the Director of the Graduate Program. The examination may be taken as many times as necessary without prejudice to a student's standing in the Ph.D. program.

Residence Requirement. The minimum residence requirement is one year beyond the master's degree or two years beyond the bachelor's.

Other Requirements

1. Language requirement. A reading knowledge of one major foreign language (modern European, ancient Greek, or Latin). Satisfaction of the language requirement in the master's degree at Brandeis completes the language requirement for the Ph.D. as well.

2. One of the following, as relevant to a student's research and career plans and as approved by his or her adviser and the Director of Graduate Studies: (a) a reading knowledge of a second major foreign language; (b) one graduate-level course in the literature of a foreign language or in a discipline other than English which is related to the student's dissertation plans.

Training in Teaching. Provided openings exist, students in their second and third year in the program can expect to be awarded at least one teaching assistantship each year, provided their academic work is of high calibre.

Admission to Candidacy. A student will be recommended by the Department for admission to candidacy for the Ph.D. degree after completing with distinction the program of study and satisfying all departmental requirements prior to the writing and defense of a dissertation. A student admitted to candidacy must have submitted a formal dissertation proposal, subject to approval by the student's dissertation director and by an additional member of the departmental faculty.

Dissertation and Defense. Each student will submit a dissertation in a form approved by his or her dissertation director and by a committee appointed by the Director of Graduate Studies. The student will defend the dissertation at a final oral examination. The dissertation may be a monograph, a series of closely related essays, a bibliographical project or a textual project.

History and Structure of English

The Department also offers an alternative program in the history and structure of the English language, with specialization in Old, Middle, or Early Modern English. For details, address the chairman of the Department.

Courses of Instruction

***ENGLISH 120b. Modes of the Short Poem**

ENGLISH 122a. Old English

An introduction to the language and literature of the Anglo-Saxons. Readings will include the major extant short poems, including *The Wanderer*, *The Seafarer* and *The Dream of the Rood*.
Ms. Klein

***ENGLISH 122b. Beowulf**

***ENGLISH 123a. Renaissance Poetry**

***ENGLISH 127a. D. H. Lawrence and Virginia Woolf**

ENGLISH 127b. The Contemporary and the Avant-Garde

Against the background of the great experimenters and innovators of the earlier part of the twentieth century, this course will consider the modern novel in present time. The uses made by most contemporary writers of what has been assimilated from "modernism" will be distinguished from the continuing attempts at stylistic innovation in the *avant-garde*. Works of fiction will be chosen from among the following American, English and foreign (in translation) authors: Saul Bellow, Philip Roth, Norman Mailer, Lawrence Durrell, Joyce Carol Oates, Doris Lessing, Anthony Burgess, Thomas Pynchon, John Hawkes, John Barth, Alain Robbe-Grillet, Heinrich Boll, Günter Grass, Gabriel Garcia Marquez, Jorge Luis Borges.
Mr. Onorato

***ENGLISH 128b. Music and Poetry**

***ENGLISH 129a and b. Directed Writing: Prose or Poetry**

ENGLISH 132bR. Chaucer

An introduction to Middle English and a study of some works of Chaucer, including *The Parliament of Fowls* and *The Canterbury Tales*. We will emphasize Chaucer's ideas and the various poetic forms and narrative techniques he used to develop them.

Ms. Ferster

ENGLISH 133a. Advanced Shakespeare

An intensive analysis of a small number of Shakespeare's plays.

Prerequisite: English 33 or consent of instructor.

Mr. Levitan

ENGLISH 134a. The Women of Letters in the Eighteenth Century

Women as writers of commercial and non-commercial literature in the Restoration and eighteenth century: novels, plays, pamphlets, journals, diaries and letters. During the second half of the eighteenth century women produced the majority of all novels that were published. Issues to be explored include women's attitudes toward literary achievement and literary fame, the culture's attitudes toward women writers, the complicity of women writers in the promulgation of images of the "good women" and the extent of the reaction against such stereotypes, women as observers of manners and the social scene generally, and women's ability to deal with markets and earn money through writing. Writers to be studied include Aphra Behn, Margaret Cavendish, Mary Hays, Hester Thrale, Elizabeth Griffith, Lady Mary Wortely Montagu, Elizabeth Inchbald, Ann Radcliffe, Fanny Burney, Mary Wollstonecraft and Jane Austen.

Ms. Staves

ENGLISH 135a. Romantic Poetry

This course will cover Blake, Wordsworth and Coleridge. Emphasis will be upon the poetry, but relevant prose (letters and criticism) by these authors will be included.

Mr. Wolf

ENGLISH 135b. Romantic Poetry

This course will cover Shelley, Byron, Keats. The emphasis will be upon the poetry but relevant prose (letters and criticism) by these authors will be included.

Ms. Ward

***ENGLISH 136a. Whitman and his Archive**

***ENGLISH 137a. Twentieth Century Poets: Frost, Eliot, Pound**

***ENGLISH 137b. Poetry, Action, and Action-Poetry in Ezra Pound**

ENGLISH 138a. Studies in Literary Influence: Milton, Blake, Wordsworth, Keats

With Milton as the focus, we will read his poetry and then deal with the variety of Romantic reactions to it.

Mr. Wolf

***ENGLISH 140b. The Long Narrative Poem**

ENGLISH 142aR. Intention and Interpretation in Medieval Literature

We will study the uses of language (boasting, threatening, flattering, promising, story-telling, etc.) and statements about language in medieval poetry and prose in order to analyze medieval theories of communication. Readings will include Augustine's *Confessions*, *Beowulf* and *Gawain and the Green Knight* (in translation), and will focus on Chaucer (*The Book of the Duchess*, *Troilus and Criseyde*, selected *Canterbury Tales*), all in Middle English. *Ms. Ferster*

***ENGLISH 142b. The Ballad**

ENGLISH 143a. Elizabethan and Jacobean Drama

A survey of major dramatic works, excluding Shakespeare, from roughly the mid-sixteenth to the mid-seventeenth centuries. *Mr. Levitan*

***ENGLISH 143b. English Drama Before Shakespeare**

ENGLISH 145b. Victorian Poetry and Poetics

***ENGLISH 146a. Poetry and Revolution, 1780-1839**

ENGLISH 147a. Faulkner and Fitzgerald

This course will include all of the novels of Fitzgerald plus four or five Faulkner novels including *The Sound and the Fury* and *Absalom, Absalom!* A number of short stories by both authors will be included. *Mr. Swiggart*

***ENGLISH 148b. Classical Background of English Literature: Myths**

***ENGLISH 150b. Problems of Poetry**

***ENGLISH 153a. Topics in Poetry and Religion**

ENGLISH 153b. Milton

All of Milton's major poems and some smaller works in both prose and poetry will be read. *Mr. Smith*

***ENGLISH 154b. Augustan Satire**

ENGLISH 155aR. Women as Men of Letters in Nineteenth Century England

The circumstances and achievements of major English women writers born between 1800 and 1820 (L.E.L. Harriet Martineau, Elizabeth Barrett Browning, Elizabeth Gaskell, The Brontes, George Eliot); followed by a briefer account of the careers of some of their successors born in the 1850's (Olive Shiner, Mrs. Humphrey Ward, Beatrice Webb); and of the literary situation up to the turn of the century, which constitutes the formative situation for the generation of women writers born in the 1880's and the 1890's (Rose MacCauley, Virginia Woolf, Katherine Mansfield, Agatha Christie, Storm Jameson, Ivy Compton-Burnett, V. Sackville-West, Jean Rhys, Rebecca West, Elizabeth Bowen, Enid Bagnold and Antonia White). *Mr. Preyer*

***ENGLISH 156a. Dissent in American Literature: From the Revolution to the Civil War**

***ENGLISH 157a. The Poetry of W. B. Yeats and Robert Frost**

***ENGLISH 157b. Twentieth Century British Drama**

ENGLISH 158a. Readings in American Poetry

American poetry from the beginnings to the present time with attention to the following authors: Taylor, Poe, Dickinson, Longfellow, Whitman, Robinson, Crane, Eliot, Pound, Stevens. *Mr. Grossman*

***ENGLISH 163a. Seventeenth Century Poetry**

***ENGLISH 164b. Restoration Drama**

***ENGLISH 166a. Herman Melville**

***ENGLISH 166b. American Transcendentalism: Emerson to Dickinson**

ENGLISH 167aR. The Irish Literary Renaissance

Authors to be covered include Yeats, Synge, George Moore, Joyce, and O'Casey. *Mr. Prince*

***ENGLISH 167b. Joyce**

***ENGLISH 171b. Literary Movements**

ENGLISH 174b. Eighteenth Century Novel

The rise of the novel in England. Early theories of the novel and problems and practical criticism of fiction. This year the course will be especially concerned with the relative importance of romance and realism in the development of the novel and with the discovery of marriage as a novelistic subject. Writers to be studied include: Richardson, Fielding, Sterns, Radcliffe, Austen. *Mr. Hoover*

ENGLISH 175a. Dickens and Dostoevsky

The course will emphasize the modes of grotesque and philosophical comedy, the representation of the city, the romantic extension of realism, and the major literary forms of the novel of ideas and the novel of social reform. *Mr. Fisher*

***ENGLISH 175b. City and Psyche in Victorian Literature.**

ENGLISH 176aR. Hawthorne and Melville

A study of the complete works of Nathaniel Hawthorne and Herman Melville. *Mr. Gilmore*

***ENGLISH 176b. Hawthorne, Melville and Poe**

***ENGLISH 177a. The Experiment Called Modernism**

ENGLISH 177b. Contemporary Women Writers

This course studies poetry and prose by women from the 1890's to the present day, in terms of socio-cultural context, literary traditions and feminist criticism. Among the authors read are Chopin, Cather, Woolf, Colette, Stead, Lessing, Levertov, Rich, Giovanni, Walker, Jones and Broumas. *Ms. Klein*

***ENGLISH 178a. Literature and Language Meaning**

***ENGLISH 181b. The Fiction of the Self**

***ENGLISH 187a. The Modern Novel I**

ENGLISH 187bR. The Modern Novel II

This course will continue covering the emergence of the modern novel, including works by Joyce, Stein, Gide, Kafka, Hemingway, Fitzgerald, Faulkner, Camus, Sartre, Beckett, and Nabokov. *Mr. Onorato*

***ENGLISH 188b. Linguistics and Literature**

ENGLISH 191a. Introduction to Linguistics

Through a detailed study of English syntax, this course aims to awaken the student's awareness of how much a speaker of English knows about his language that he has not been explicitly taught, to show that this knowledge requires explanation, and to develop a theory of linguistic structure which can account for it.

Ms. Maling

ENGLISH 191aR. Introduction to Linguistics

Ms. Grimshaw

ENGLISH 191b. Linguistic Structure

A continuation of English 191a. This course extends the syntactic framework developed in the introductory course through the study of such problems as the complement system and constraints of transformations, with emphasis on their relevance to universal grammar. *Ms. Grimshaw*

ENGLISH 192a. History of the English Language

An examination of the structure of the English language at various stages in its development and of the processes of linguistic change relating these stages. No knowledge of linguistics is assumed. *Ms. Klein and Ms. Maling*

ENGLISH 193a. Introduction to Phonological Problems

This course is an introduction to Generative Phonology, which is a theory of natural language sound systems. It begins with a review of articulatory phonetics, followed by distinctive feature theory and the concept of a "natural class." The central section covers morphology and the nature of morphophonemics, and universal properties of the rules that relate morphophonemic and phonetic representations. The course ends with discussion of a special topic such as syllable structure or word-formation. *Ms. Grimshaw*

ENGLISH 193b. Introduction to Comparative and Historical Linguistics

Principles and methods of language history and linguistic reconstruction, with attention to the historical development of the notion of Indo-European in the 19th and 20th centuries. Readings from Grimm, Verner, Saussure, Meillet, etc. Practical exercises in comparative and internal reconstruction. Previous knowledge of phonology useful but not required. *Ms. Maling*

***ENGLISH 194b. Language and Mind**

***ENGLISH 195b. Linguistics and Logic**

***ENGLISH 196a. Semantics**

ENGLISH 196b. Syntactic Investigations in an Unfamiliar Language

Using a native speaker of an unfamiliar language (such as Turkish or Amharic) as a source of data, the class will investigate the structure of the language, focusing on syntax, and compare it with the structure of English and other familiar languages. May be repeated for credit.

Ms. Maling

ENGLISH 197a. Language Acquisition

When a child knows a language he or she has successfully constructed a grammar of it: in the course of constructing the grammar the child must form hypotheses about the language and test them against the available data. The central problem of language acquisition is to explain what makes this formidable task possible. In the course, we will study and evaluate theories of language acquisition in this light, basing our conclusions on recent research in the development of syntax, semantics and phonology. The overall goal is to arrive at a coherent picture of the kinds of hypotheses children make, and the kinds of strategies they use, as they progress toward mastery over their language.

Ms. Grimshaw

***ENGLISH 198b. Linguistics and Music**

Seminars

ENGLISH 200a. Methods of Literary Study: Eighteenth Century Poetry

Required of all first-year graduate students.

Mr. Hoover

ENGLISH 201a. History and Theory of Criticism: The Old Tradition

Mr. Cunningham

ENGLISH 201b. History and Theory of Criticism: The Development of Modern Critical Theories

See Literary Studies 201b.

Mr. Engelberg

ENGLISH 225b. Nineteenth Century

Mr. Preyer

ENGLISH 227b. Contemporary Poets

Mr. Swiggart

ENGLISH 243a. Renaissance Poetry

Mr. Prince

ENGLISH 247a. Modern Novel

Mr. Onorato

ENGLISH 254b. Eighteenth Century Seminar

Ms. Staves

ENGLISH 255a. Blake and Keats

A study of two very different poets focusing on common preoccupations by which the romantic element in their work may be assessed: themes of fall and regeneration; attitudes toward nature, society and sexuality; the function of the artist; and the reformulation of tradition.

Ms. Ward

ENGLISH 263b. Seventeenth Century Prose

Mr. Harris

ENGLISH 295b. Studies in a Major Text

Required of all first year students.

Mr. Hoover

ENGLISH 350-368a and b. Directed Research

Open to advanced graduate students with the consent of the instructor and the Director of Graduate Studies.

350a and b.	<i>Mr. Cunningham</i>	360a and b.	<i>Mr. Levitan</i>
351b.	<i>Mr. Harris</i>	361a and b.	<i>Mr. Onorato</i>
352a and b.	<i>Mr. Hindus</i>	362a and b.	<i>Ms. Staves</i>
353a and b.	<i>Mr. Hoover</i>	363a and b.	<i>Ms. Ward</i>
354a and b.	<i>Mr. Preyer</i>	364a and b.	<i>Ms. Ferster</i>
355a and b.	<i>Mr. Smith</i>	365a and b.	<i>Mr. Fisher</i>
356a and b.	<i>Mr. Swiggart</i>	366a and b.	<i>Mr. Gilmore</i>
357a and b.	<i>Mr. Grossman</i>	367a and b.	<i>Mr. Lelchuk</i>
*358a and b.	<i>Mr. Jackendoff</i>	368a and b.	<i>Ms. Maling</i>
359a and b.	<i>Ms. Klein</i>	369a and b.	<i>Mr. Wolf</i>

ENGLISH 400-419. Dissertation Research

400.	<i>Mr. Cunningham</i>	410.	<i>Mr. Levitan</i>
401.	<i>Mr. Harris</i>	411.	<i>Mr. Onorato</i>
402.	<i>Mr. Hindus</i>	412.	<i>Ms. Staves</i>
403.	<i>Mr. Hoover</i>	413.	<i>Ms. Ward</i>
404.	<i>Mr. Preyer</i>	414.	<i>Ms. Ferster</i>
405.	<i>Mr. Smith</i>	415.	<i>Mr. Fisher</i>
406.	<i>Mr. Swiggart</i>	416.	<i>Mr. Gilmore</i>
407.	<i>Mr. Grossman</i>	417.	<i>Mr. Lelchuk</i>
408.	<i>Mr. Jackendoff</i>	418.	<i>Ms. Maling</i>
409.	<i>Ms. Klein</i>	419.	<i>Mr. Wolf</i>

FRENCH

See Joint Program of Literary Studies (page 94).

GERMAN

See Joint Program of Literary Studies (page 94).

HISTORY

See Comparative History (page 73) and History of Ideas (page 129).

HISTORY OF AMERICAN CIVILIZATION

Objectives

The graduate program in the History of American Civilization, leading to the degree of Doctor of Philosophy in History, has been designed primarily to educate professional scholars and teachers of American history. The curriculum emphasizes both a comprehensive understanding of American history and the mastery of historical research and writing. For a comparative view of the American experience, students will undertake selective studies in modern European, Asian, Latin American or African history. A related field of study will be defined, according to individual background and interest, in one of the following ways:

1. Training in one of the disciplines of the social sciences or humanities — politics, international relations, or literature, for example — to provide perspectives and methods that can illuminate historical problems.

2. A thematic field in American history, involving a distinctive subject matter and discipline: for example, American social history, American legal and constitutional history, American intellectual history, or American art and architecture.

3. A topic in comparative history, involving a distinctive subject matter and discipline: 20th century British and American literature, for example, or 19th century emigration/immigration, or 18th century American and European political and social philosophy.

A small, select student body will work in close cooperation with the faculty. From the beginning, individual programs of study will be developed to prepare students for their qualifying examinations and to guide them toward their dissertation research. Normally, the first year's work is concentrated in American history, including substantial experience in directed research and a critical approach to problems of historiography. Second year students, while pursuing further directed research, chiefly are encouraged to choose courses to complete their preparation in the examination fields. Studies in related fields will be arranged individually with appropriate members of the University's Graduate Faculty, either through standard courses or directed readings. For selected students with appropriate qualifications, there are opportunities for advanced study and research with distinguished scholars at neighboring universities in such fields as legal history and business history. Applicants should note with care the four parts of the examination, specified under *Degree Requirements*, in which all students are expected to demonstrate proficiency.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of the catalog, apply to candidates for admission to this program. An undergraduate major in history is the preferred preparation for admission, and the student's undergraduate curriculum should include some fundamental courses in American history and related fields in the social sciences or humanities. Students with the M.A. or a professional degree in history, law, or other related fields are invited to apply. Above all, the admissions committee must be satisfied that the applicant's interest in the History of American Civilization is serious and that his or her aspirations are professional. Students interested in Crown Fellowships or in the special arrangements for study in professional fields at neighboring universities, noted above, should submit applications by February 1, if possible.

Faculty

Executive Committee: Professor David H. Fischer, *Chairman*; Professors Eugene C. Black, John P. Demos, Morton Keller, Marvin Meyers; Associate Professor Gerald S. Bernstein; Assistant Professor Alexander Keyssar.

Staff

Professor Eugene C. Black: Comparative Anglo-American history.
Professor John P. Demos: Family and community. Colonial America.
Professor David Hackett Fischer: Social and political structure. Early Republic.
Professor Morton Keller: Legal and political institutions. Modern America.
Professor Marvin Meyers: Ideas and politics. Jacksonian America.
Associate Professor Gerald S. Bernstein: American art and architecture.
Assistant Professor Alexander Keyssar: Labor and working-class. Modern America.

Degree Requirements

Master of Arts

No one will be accepted in the program who is not a doctoral candidate. Applications from persons seeking a terminal M.A. degree are not welcome. However, the M.A. degree in History may be awarded to those who (1) have successfully completed one full year of residence at Brandeis University (eight half-courses), including two 200-level research courses, and (2) have passed the foreign language requirement.

Doctor of Philosophy

Program of Study. Doctoral candidates must complete two years in residence at Brandeis, and a minimum of sixteen half-courses. Programs of study and concentration will be formulated for each student, subject to the approval of the Executive Committee. Students will be required to maintain an average of B- or better in order to continue in the program. Continuance of fellowship support requires an average of A- or better. Incoming students normally will be expected to take one full course of Directed Research in American History in their first year of residence. The Committee may, at its discretion, grant a student transfer credit of up to one year toward the Ph.D. residence requirement for relevant graduate or professional work done elsewhere. Application for such credit shall be considered only after a student has completed one semester's residence in a full-time program. The second 200-level Directed Research course may be waived by the committee on the basis of a master's thesis or comparable research project at the graduate or professional level done elsewhere.

Language Requirement. A high level of reading proficiency in one foreign language is required of all students. Students are expected to pass the language examination during the first year of residence. A student who has not passed the foreign language examination by the end of the first year is not eligible for financial aid from the University for the second year. The completion of language requirements at another university does not exempt the candidate from the Brandeis requirement.

Qualifying Examination. Each doctoral candidate must pass at the doctoral level a qualifying examination in the following four fields: (1) general American history, one examiner will be in early American history and the other in modern American history; (2) a period of specialization in American history; (3) an area of comparative modern European, Asian, Latin American or African history; (4) a related field of study, involving one of the disciplines in the social sciences or the humanities. (Note the three alternative approaches for the fourth field specified under Objectives.) The period of

specialization will normally be selected from the following: 1607-1763, 1763-1815, 1815-1877, 1877-1914, 1914-present. The special period may be redefined on request, for good academic reasons. All proposed fields must be submitted in writing and approved by the Executive Committee. Students entering the program without previous graduate training in American history are expected to take the Qualifying Examination no later than the end of their fifth semester of residence and must pass the examination by the end of the sixth semester. Students who have earned an M.A. in history elsewhere, or who have one year of transfer credit for work taken elsewhere, are expected to take and pass the Qualifying Examination by the end of their second year in the program.

Unless the student elects a single three-hour oral examination on all four fields, the Qualifying Examinations will be taken separately in each of the fields, with the general American field coming at the end. For each of the fields (2), (3), and (4), as above, the student will choose one appropriate professor with the approval of the chairman of the program. That professor, in consultation with the student, will define the requirements, course of preparation, and mode of examination (written and/or oral) for the field.

For the general American field, the Chairman will appoint two members of the Executive Committee as examiners. The student may choose a one-hour oral examination or a three-hour written examination followed, if the examiners so require, by an oral examination. In either case, the two professors in consultation with the student will define in advance the major themes or problems on which the examination will be based. So far as possible, fields (3) and (4), as above, should be selected with a view to broadening and deepening the student's understanding of his or her American history fields, and providing valuable background for the dissertation work.

With the consent of the Chairman and the professor concerned, qualified students in appropriate cases may be examined in fields (3) or (4), as above, by a faculty member at another university. Moreover, with the consent of the Executive Committee, examinations in fields (3) or (4), as above, may be waived for students with the M.A., J.D., or other advanced degrees that represent a level or kind of training and achievement fully equivalent to those required in the Brandeis examinations for those fields.

Admission to Candidacy. A student may be admitted to candidacy for the Ph.D. degree upon satisfactory completion of the following: course and residence requirements, demonstration of a high level of proficiency in one foreign language, the qualifying examinations, and when the prospectus for a dissertation is approved by the Executive Committee.

Dissertation and Defense. When the dissertation is accepted by the Committee, a final oral examination will be scheduled at which the candidate must successfully defend his or her dissertation before the Committee and other members of the faculty who may participate. After a candidate has successfully defended the dissertation, he or she will give a public lecture.

Courses of Instruction

HISTORY 200a. Colloquium in American and European Comparative History Since the 18th Century

Comparative examination of major historical issues in Europe and the United States from the eighteenth through the twentieth centuries. *Required of first-year graduate students in the History of American Civilization and Comparative History programs.*

Mr. Schuker

HISTORY 200b. Historiography

A critical analysis of classical historiography. *Required of first-year graduate students in the History of American Civilization and Comparative History programs.* Messrs. Barraclough and Fischer

HISTORY 201aA — 208aA. Directed Research in American History

Students will normally elect one of the following in the fall term of the first and the second years. Each is designed to provide experience in designing, researching and writing a substantial essay of a monographic character, based on extensive use of sources. This is the equivalent of a full course and extends the due date for the final draft of the paper to March 1, to permit sufficient time for a major project. Specific research topics are selected by the student in consultation with the professor.

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|---|----------------------|
| 201aA. Topics in American Art and Architecture | <i>Mr. Bernstein</i> |
| 202aA. Topics in British and European History | <i>Mr. Black</i> |
| 203aA. Topics in American Colonial History | <i>Mr. Demos</i> |
| 204aA. Topics in Social History, with emphasis on the Early Republic | <i>Mr. Fischer</i> |
| 205aA. Topics in Modern America | <i>Mr. Keller</i> |
| 207aA. Topics in Political and Social Thought, with emphasis on the period 1750-1850 | |
| 208aA. Topics in Modern American Labor: Working-Class History | <i>Mr. Keyssar</i> |

***HISTORY 236b. The American Renaissance**

HISTORY 301-308. Readings in the History of American Civilization

The following are available in either semester:

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|---------------------------------|-------------------------------|
| 301a or b. <i>Mr. Bernstein</i> | 305a or b. <i>Mr. Keller</i> |
| 302a or b. <i>Mr. Black</i> | 307a or b. <i>Mr. Meyers</i> |
| 303a or b. <i>Mr. Demos</i> | 308a or b. <i>Mr. Keyssar</i> |
| 304a or b. <i>Mr. Fischer</i> | |

HISTORY 401-408. Dissertation Research

- | | |
|---------------------------|-------------------------|
| 401. <i>Mr. Bernstein</i> | 405. <i>Mr. Keller</i> |
| 402. <i>Mr. Black</i> | 407. <i>Mr. Meyers</i> |
| 403. <i>Mr. Demos</i> | 408. <i>Mr. Keyssar</i> |
| 404. <i>Mr. Fischer</i> | |

For courses available to History of American Civilization students in other historical areas, see the listings by departments and programs in the Graduate School and College catalogs, especially under Comparative History and History of Ideas.

In addition, the following courses may be taken as equivalent to History of American Civilization seminars:

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|---|------------------|
| HISTORY 150aR. Colonial America: People, Culture and Society | <i>Mr. Demos</i> |
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***HISTORY 150b. The American Revolution**

- | | |
|--|-------------------|
| HISTORY 151a. The Founding of the American Republic | <i>Mr. Meyers</i> |
| HISTORY 152b. Problems of Democracy in Jacksonian America | <i>Mr. Meyers</i> |

- *HISTORY 154b. The History of Modern America**
- HISTORY 156a. American Society: An Analytical History, 1607 to the Civil War** *Mr. Fischer*
- *HISTORY 156b. American Society: An Analytical History, Civil War to the Present**
- HISTORY 158a. Working Class History in the United States** *Mr. Keyssar*
- *HISTORY 159a. Immigration and Immigrants in American History**
-
- *HISTORY 159b. Family and Society in the American Past**
- HISTORY 161a. The American Political Tradition: Origins of the Civil War** *Mr. Meyers*
- *HISTORY 161bR. The American Polity**
- *HISTORY 167b. Topics in American Legal History**
- HISTORY 191aR. History and Psychology** *Mr. Demos*
- *HISTORY 193b. The United States and Great Britain: Comparative Perspectives, 1830-1930**
-
- HISTORY 198b. Science and Technology in the 20th Century** *Mr. Schweber*

JOINT PROGRAM OF LITERARY STUDIES

Comparative Literature, French, German, Russian and Spanish.

Objectives

The joint program of literary studies normally accepts only students who declare themselves for the Ph.D. degree in the areas listed above. Interdisciplinary in design, the program aims to train literary scholars and teachers whose professional capabilities will be broader than their individual specialties. Students will have the opportunity to study the theory of literature, history and theory of literary criticism, and scholarly methodology in addition to the specific literatures in which the degree will be earned. A small and carefully selected student body will work closely with the faculty of the program and with one another in a core curriculum before specializing. Students are encouraged to plan an individual program of studies within their interests in consultation with their adviser(s). Although the program encourages individual initiative, with the advice and consent of adviser(s), it should be stressed that all students, whatever their areas, must master the basic literature, primary and secondary, in their field. The General Examinations will assume both breadth and depth of such knowledge. (Reading lists for each area are available.)

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this program. Applications must be received no later than March 1. Please be sure to mark clearly the *area* of your choice on the application form. Each applicant must submit at least *one* college-level essay on a literary subject (which may be written in English) as a sample of work.

Faculty

Committee:

Professor Denah Lida, *Chairwoman*, (Spanish)

Professor Edward Engelberg (Comparative Literature)

Professor Murray Sachs (French)

Associate Professor Robert Szulkin (Russian)

Professor Harry Zohn (German)

In addition, all faculty members of the Departments of Germanic and Slavic Languages and Romance and Comparative Literature participate in this program.

Degree Requirements

Master of Arts

Only doctoral candidates will be accepted into the program. However, students who have completed two years of full-time study in residence may be awarded the M.A. degree. Such students must be in good standing (no incompletes). In addition, such students must have passed the language requirement, either by certification and/or examination, as follows: single area candidates: *one* foreign language *other* than the major language; comparative literature candidates: *two* foreign languages *other* than the major language. Finally, such students must have passed satisfactorily the Qualifying Examinations. (Students who receive this M.A. will be expected to demonstrate to the satisfaction of the Committee substantial competence in *one* of the areas of the program: e.g., Spanish, Russian, French.)

Doctor of Philosophy

Program of Study. Individual programs of study will be arranged between students and their advisers. The core curriculum consists of several elements: all students in the Program are obligated to enroll in Literary Studies 201a and 201b (The History and Theory of Criticism from Aristotle to the Moderns) and in Literary Studies 200a (Methods of Research). All students in the Program will be held responsible for certain works on literary theory, literary history, aesthetics (not studied in the criticism seminars) at the time of General Examination.

Although the Program is designed to permit students to develop their studies coincident with their interests and talents, and in consultation with their adviser(s), full-time students are expected to enroll in at least *three* literary studies seminars each year during the first two years of residence. In the first year students are obliged to enroll in the year seminar, History and Theory of Criticism, and Methods of Research (one semester); hence first year students are expected to augment this schedule with *at least* one or two additional seminars from the literary studies offerings.

Residence Requirements. The minimum residence requirement is two years of full-time study beyond the bachelor's degree.

Language Requirements. Students will be asked to demonstrate a reading competence in *at least* two foreign languages to be determined in consultation with their advisers. In certain areas of specialization, additional languages (e.g., Latin) may become necessary research tools (comparative literature students should consult the special statement on language requirements below). Students must be certified in at least one language by the end of the first year in residence.

Qualifying Examinations. Qualifying examinations must be taken at the start of a student's second full year in residence, with the purpose of determining that the student is qualified to study literature productively at the doctoral level. Only students who have a complete and satisfactory record for their first year will be permitted to take the Qualifying Examinations. *No postponement of these examinations is allowed.* The examinations are both written and oral, and will be scheduled each year for the third or fourth week in September. The examinations are prepared and conducted by a three-member faculty committee chosen at the end of the first year of study by the candidate in consultation with the candidate's faculty adviser. At the outcome of the examination, the candidate receives a detailed written evaluation from the three-member committee, based on the written and oral performances and on the entire record of the candidate's first year in residence.

General Examinations. Students may take the General Examinations, which demonstrate full competency in their chosen discipline, whenever they and their advisers feel they can appropriately do so. However, all students are expected to have completed the General Examinations no later than the fall semester of their fourth year in residence. Examinations will be offered twice each academic year, in October and May, and will consist of three written examinations and an oral examination. Details about the contents and procedures are available on request.

Admission to Candidacy. Candidates will be recommended for admission to candidacy when the residence and language requirements have been met, the General Examinations have been successfully passed, and a prospectus of the candidate's proposed dissertation topic has been approved by a committee of the area concerned.

Dissertation and Defense. The completed dissertation must be read and found acceptable by its director and two other readers before the candidate is eligible for the Final Oral Examination. The Final Oral Examination will be conducted by a committee of not less than four, one of whom must come from outside the candidate's area.

Teaching. All students in the Program are expected to do some supervised teaching, either as a teaching assistant or by means of other arrangements. In some areas, where teaching assistantships may at times be unavailable, students will be expected to fulfill some teaching opportunities (occasional class lectures, for example) without remuneration.

For Candidates in Comparative Literature

1. Any student in the Program who declares candidacy in comparative literature should decide, as soon as possible, on a *major* and *minor* literature. The major literature may *not* be English or American. Exact "proportions" cannot be stated in advance and will be worked out in consultation between students and adviser(s).

2. Candidates in comparative literature are expected to take three language examinations as follows:

a. The major language, which should be near level of mastery (reading, writing and speaking) on acceptance to the Program. Students may simply be "certified" for this language if their level of competence is obvious.

b. The second foreign language should be mastered as a reading language with a fluency that will permit easy access to all primary and secondary literature in the specified area.

c. The third foreign language should be a reading tool for primary and especially secondary materials.

It is quite possible that for certain areas of specialization — Medieval, Renaissance, etc. — additional languages will become necessary (e.g., Latin, Catalan, Old French).

Courses of Instruction

LITERARY STUDIES 200a. Methods of Research *Mr. Sachs*

LITERARY STUDIES 201a. History and Theory of Criticism: The Old Tradition
See English 201a for description. *Mr. Cunningham*

LITERARY STUDIES 201b. History and Theory of Criticism: The Development of Modern Critical Theories *Mr. Engelberg*

LITERARY STUDIES 202b. Fiction: Theory and Practice *Mr. Sachs*

***LITERARY STUDIES 203a. Romantic Phenomena**

***LITERARY STUDIES 204b. Theory and Practice of Literary Translation**

***LITERARY STUDIES 205a. Crosscurrents in the French and English Enlightenment**

***LITERARY STUDIES 206b. The Comic in Literature: Theory and Practice**

***LITERARY STUDIES 207a. Marxist Criticism: Literature and Society in Early Modern Europe**

LITERARY STUDIES 208b. Cervantes in his European Context: Heritage and Lineage *Ms. Lida*

LITERARY STUDIES 209a. Modern Phenomena *Mr. Engelberg*

***LITERARY STUDIES 210b. Genesis and Development of a Myth: Don Juan**

***LITERARY STUDIES 211a. The Tragic in Literature**

LITERARY STUDIES 212b. Techniques of Stylistic Analysis *Mr. Frey*

LITERARY STUDIES 301 — 305. Readings in Area Studies: Tutorials

301a and b. Comparative Literature. Readings in Comparative Texts
Mr. Engelberg and Staff

302a and b. French. Readings in French Texts *Mr. Sachs and Staff*

303a and b. German. Readings in German Texts *Mr. Zohn and Staff*

304a and b. Russian. Readings in Russian Texts *Mr. Szulkin and Staff*

305a and b. Spanish. Readings in Spanish Texts *Ms. Lida and Staff*

LITERARY STUDIES 351 — 355. Directed Research

Open to advanced graduate students with the consent of the instructor and the Chairman of the Literary Studies Program.

351a and b.	Comparative Literature	<i>Mr. Engelberg and Staff</i>
352a and b.	French	<i>Mr. Sachs and Staff</i>
353a and b.	German	<i>Mr. Zohn and Staff</i>
354a and b.	Russian	<i>Mr. Szulkin and Staff</i>
355a and b.	Spanish	<i>Ms. Lida and Staff</i>

LITERARY STUDIES 400. Dissertation Research *Staff*

Following is a list of selected courses in each of the areas which constitute the Joint Program of Literary Studies which may be of special interest to graduate students. For a full list of all courses available consult the undergraduate catalog under Departments of Germanic-Slavic Languages and Romance and Comparative Literature.

Comparative Literature

COMPARATIVE LITERATURE 116aR. The Image of Man in European Renaissance Literature

Fundamental changes in Western man's view of his world and himself. Readings in such authors as Machiavelli, Ariosto, Castiglione, Rabelais, Montaigne and Shakespeare. *Mr. Lansing*

COMPARATIVE LITERATURE 120a. Classicism and Rationalism

The scope of reason in literature and society; representative works of Cyrano de Bergerac, Corneille, Descartes, Hobbes, Jonson, Marlowe, Molière, More, Racine, Shakespeare, Swift. *Mr. Gendzier*

***COMPARATIVE LITERATURE 125a. Women in Literature**

COMPARATIVE LITERATURE 130b. Crisis of Consciousness: 1715-1830

Literary works reflecting a new vision of humanity: the sublime genius, liberation of the subconscious, quest for the divine, social justice. Authors will include Rousseau, Diderot, Goethe, Wordsworth, Novalis, Stendhal. *Mr. Kaplan*

***COMPARATIVE LITERATURE 133bR. Aristocratic and Popular Drama in Japan and the West**

***COMPARATIVE LITERATURE 137a. Modern Poetry in Terms of Modern Art**

COMPARATIVE LITERATURE 141b. The Picaresque Novel

A developmental and critical analysis of the picaresque novel in European and American literatures from the sixteenth through the twentieth centuries. Readings will begin with the *Lazarillo de Tormes* and include Cervantes, Quevedo, Lesage, Fielding, Mann and Bellow. *Ms. Rauchwarger*

***COMPARATIVE LITERATURE 145a. European Romanticism**

***COMPARATIVE LITERATURE 145b. Towards Modernism**

***COMPARATIVE LITERATURE 147bR. Politics as Reality and Utopia in Twentieth Century Literature**

COMPARATIVE LITERATURE 148bR. Modern European Lyric

Rilke's *Sonnets to Orpheus* and the poems and theoretical writings of Antonio Machado and Paul Valéry will be the basis for understanding twentieth century poetic theory and practice. Other poets will include Montale, Seferis, Neruda and Paz. *Mr. Yglesias*

***COMPARATIVE LITERATURE 150aR. The Bildungsroman**

***COMPARATIVE LITERATURE 156b. Early European Narrative Forms**

***COMPARATIVE LITERATURE 175a. Dickens and Dostoevsky**

***COMPARATIVE LITERATURE 175b. The Psychological Novel**

COMPARATIVE LITERATURE 180a. Versions of the "Absurd"

Readings in Kleist, E.T.A. Hoffman, Kierkegaard, Dostoevsky, Günter, Grass, Beckett, Ionesco, Sartre. *Ms. Kern*

***COMPARATIVE LITERATURE 187b. Love in the Middle Ages**

***COMPARATIVE LITERATURE 192aR. The Faust Theme in European Literature**

COMPARATIVE LITERATURE 193a. Native American Literature

Representative works, traditional and modern, ranging from Navaho ceremonial through Black Elk's autobiography and up to important modern novels like M. Scott Momaday's *House Made of Dawn* will be read with a view to establishing a composite picture of human experience as shaped by Indians' imagination and spiritual values. The course will serve as an introduction to a vast, important and little understood part of our heritage and will raise more questions than it can answer. *Mr. Yglesias*

***COMPARATIVE LITERATURE 194aR. Social Disillusionment in the Novel: 1848-1925**

COMPARATIVE LITERATURE 195a. Crime and Punishment: Variations on a Literary Theme

The course explores some of the issues raised in literary texts whose primary concern is the crime-punishment theme: the problems of justice, knowledge, guilt, expiation, forgiveness. Texts range from the Book of Job to works by Coleridge, Stendhal, Melville, Conrad, James, Camus, Kafka and Elie Wiesel. *Mr. Engelberg*

***COMPARATIVE LITERATURE 199b. The Roots of Literature**

French

***FRENCH 112a. The French Middle Ages**

FRENCH 116b. The French Renaissance

An examination of the revolt against reason, its implications and consequences. Readings in Rabelais, Montaigne, the Pléiade poets, and others. *Mr. Joseph*

***FRENCH 117aR. French Classicism**

FRENCH 118b. The French Enlightenment

The origins of romanticism and realism; modern notions of tolerance, the pursuit of happiness, and feminism; conflicts between primitivism and progress, rationalism and experience, secular humanism and religious morality will be analyzed in such writers as Cyrano de Bergerac, Fontenelle, Bayle, Montesquieu, Voltaire, Diderot, Rousseau and Sade.

Mr. Gendzier

FRENCH 119a. French Romanticism

An examination of the principal works of poetry, fiction and drama which gave the Romantic movement in France its distinctive character. Works by Chateaubriand, Lamartine, Hugo, Balzac, Vigny, Musset and George Sand will be closely studied.

Mr. Kaplan

FRENCH 125a. The Evolution of French Poetry from the Middle Ages to the French Revolution

A study of the growth and the changes in the idea of poetry and an assessment of the French achievement in this literary genre from the beginnings of French literature to the end of the eighteenth century.

Mr. Joseph

***FRENCH 138bR. The Great Age of French Fiction**

FRENCH 140b. Twentieth Century French Theatre

Modern and contemporary movements from Jarry to Beckett. This course will include discussions of Surrealist, Existentialist, and Absurdist drama.

Mr. Kasell

***FRENCH 149aR. Twentieth Century French Fiction**

***FRENCH 150bR. Modern French Poetry**

FRENCH 160aR. From Anti-Rationalism to "Engagement" in Modern French Literature

Mr. Varkonyi

FRENCH 170bR. The Moralism Tradition in French Literature

Study of the moralism tradition and its relation to other writers, some defining a code of conduct, some describing conduct, and others tearing down the conventional codes. Authors studied will include La Rochefoucauld, Rousseau, Baudelaire, Sartre, Camus.

Mr. Kasell

***FRENCH 180b. Modern French Critical Thought**

FRENCH 190a. Major Authors Seminar: Molière

A seminar-style course limited to qualified juniors and seniors which will study a different major author each term, chosen from the pre-Revolutionary period in the fall and from the modern era in the spring.

Ms. Kern

German

***GERMAN 102a. German Literature before 1700**

GERMAN 110aR. Introduction to the Life and Works of Goethe

Intensive study of many of Goethe's dramatic, lyric, and prose works, including *Goetz*, *Werther*, *Faust I*, and a comprehensive selection of poetry. Lectures and readings in German.

Mr. Zohn

GERMAN 120a. Enlightenment, Storm and Stress, Idealism:

Lessing, Lenz, and Schiller

Lectures and readings in German.

Mr. Zohn

***GERMAN 130b. German Romanticism**

***GERMAN 140aR. German Literature in the Nineteenth Century**

***GERMAN 150aR. The Jewish Contribution to German Literature**

***GERMAN 160bR. German Drama and Lyric Poetry from Naturalism to the Second World War**

***GERMAN 170bR. German Literature Since the "Year Zero" (1945)**

GERMAN 180a. Twentieth Century Prose: Mann, Kafka, Hesse

A survey of the work of these three important authors in the context of early twentieth century literature movements. Special emphasis will be given to close analysis and discussion of selected texts. Lectures and readings in German.

Mr. Frey

Italian

ITALIAN 110bR. Modern Italian Literature

Analysis of major works by Verga, Pirandello, Svevo, Moravia, Lampedusa, Pavese, and Vittorini with respect to political, economic and social problems of post-Risorgimento Italy. Lectures, discussion, readings and written work in Italian.

Mr. Lansing

***ITALIAN 140a. Dante's Divine Comedy**

Russian

RUSSIAN 112bR. Theory of Language (Proto-Slavic)

Reconstruction of Common Slavic, the prehistoric language from which all the Slavic languages developed. Reading texts in Old Church Slavic, the earliest extant Slavic written documents.

Mr. Lipson

***RUSSIAN 117a. Pre-Nineteenth Century Russian Literature**

***RUSSIAN 125a. Slavic Civilization**

RUSSIAN 130aR. Nineteenth Century Russian Literature

A comprehensive survey of the major writers and themes of the nineteenth century, including Gogol, Turgenev, Dostoevsky, Tolstoy, Chekhov and others. Conducted in English. Readings available in Russian and in English translation.

Ms. Dalton

***RUSSIAN 145b. Nabokov**

RUSSIAN 149bR. Twentieth Century Russian Literature

A survey course of the major literary trends and themes in Russian literature from 1900 to the present. Conducted in English. Readings available in Russian and English translation.

Mr. Szulkin

***RUSSIAN 161b. The Structure of Modern Russian**

Spanish

SPANISH 120aR. Cervantes: In Depth Study of *Don Quijote*

Ms. Lida

SPANISH 125a. The Seventeenth Century

Theoretical implication of language used as a tradition-breaking tool. Primary text: Góngora, *Soledades*.
Ms. Collard

***SPANISH 130aR. Nineteenth Century Spanish Literature**

***SPANISH 140a. Masters of Spanish Poetry**

***SPANISH 150aR. Spanish Drama of the Siglo de Oro**

***SPANISH 160a. Studies in Latin American Literature I**

SPANISH 160bR. Readings in Latin American Literature II

Topic for 1978-79: Modern novel in Latin America. Close study and discussion of works selected for their presentation of the "inner world" of man. Special attention will be given to the techniques that reveal various psychological planes as developed by such writers as Barrios, Prieto, Sábato, Onnetti, Fuentes, Cortázar, García Marquez, Donoso.
Mr. Rosser

SPANISH 161aR. Masters of Modern Latin American Poetry

Development of twentieth century poetics through the works of Dario, Vallejo, Neruda and Paz.
Mr. Yglesias

***SPANISH 162b. Studies in Argentine and Brazilian Literature**

***SPANISH 163b. Colonial and Nineteenth Century Latin American Literature**

***SPANISH 170bR. The Generation of 1898**

SPANISH 180bR. Twentieth Century Spanish Literature

A critical analysis of the poetry and theater of twentieth century Spain. Particular attention will be paid to the influence of the Spanish civil war on the thematic preoccupations and the structural evolution and experimentation within these genres. Poets included are Salinas, Aleixandra, Cernuda, Alberti and Hernández. Among the dramatists represented are Lorca, Castre, Arabal and Ruibal.
Ms. Rauchwarger

MATHEMATICS

Objectives

The graduate program in mathematics is designed primarily to lead to the Doctor of Philosophy degree. The formal course work is devoted to giving the student a broad foundation for work in modern pure mathematics. An essential part of the program consists of seminars on a variety of topics of current interest in which mathematicians from Greater Boston often participate. In addition, the Brandeis-Harvard-M.I.T. Mathematics Colloquium gives the student an opportunity to hear the current work of eminent mathematicians from all over the world.

Admission

The general requirements for admission to graduate work in mathematics are the same as those for the Graduate School as a whole. The Department has available a variety of fellowships and scholarships for well-qualified students. To be considered for such financial support the student should submit an application by February 1.

Faculty

Professor Edgar H. Brown, Jr., *Chairman*: Algebraic Topology and Differential Topology.

Professor Maurice Auslander: Noncommutative and Homological Algebra.

Professor David A. Buchsbaum: Algebra and Homological Algebra.

Professor Harold I. Levine: Differential Topology and Singularities of Differentiable Maps.

Professor Jerome P. Levine: Differential Topology. Knot Theory.

Professor Teruhisa Matsusaka: Algebraic Geometry.

Professor Alan L. Mayer: Algebraic Geometry.

Professor Paul B. Monsky, *Graduate Adviser*: Algebraic Geometry.

Professor Richard S. Palais: Differential Topology and Global Analysis.

Associate Professor David Eisenbud: Commutative Algebra. Algebraic Geometry. Singularity Theory.

Associate Professor Gerald W. Schwartz: Geometric Analysis.

Assistant Professor Allan Adler: Algebraic Geometry.

Assistant Professor Robert Bruner: Algebraic Topology.

Assistant Professor Robert Ephraim: Analysis.

Assistant Professor Jerry M. Feinberg: Analysis.

Assistant Professor Michael Harris: Number Theory.

Assistant Professor Ronald S. Irving: Algebra.

Assistant Professor Hans P. Jakobsen: Analysis.

Assistant Professor Kyoshi Igusa: Differential Topology.

Assistant Professor Charles Rockland: Partial Differential Equations.

Visiting Assistant Professor Karen Vogtmann: Topology.

Degree Requirements

Master of Arts

1. One year's residence as a full-time student.
2. Successful completion of an approved schedule of courses.
3. Satisfactory performance in the three first year courses in algebra, analysis and topology — or equivalent examinations (see Program of Study).
4. Proficiency in reading French, German, or Russian.

Doctor of Philosophy

1. Residence as a full-time student for two years.
2. Successful completion of an approved schedule of courses.
3. Superior performance in the three first year courses in algebra, analysis and topology — or equivalent examinations (see Program of Study).
4. Superior performance in the Qualifying Examination.
5. Proficiency in reading two of French, German or Russian.
6. Doctoral dissertation approved by the Department.
7. Final examination consisting of the defense of dissertation.

Program of Study. The normal first year of study consists of Mathematics 101a and b, 111a and b, and 121a and b. In exceptional circumstances and only with the permission of the graduate adviser, a student with superior preparation may omit one or more of these courses and elect higher level courses instead. In this case he or she must take an examination in the equivalent material during the first year. The second year's work will normally consist of three higher level courses in addition to preparation for the qualifying examinations described below. Upon completion of the qualifying examinations, the student will choose a dissertation adviser and begin work on a thesis. This should be accompanied by advanced courses and seminars.

Qualifying Examination. The Qualifying Examination consists of two parts: a major examination and a minor examination. Both are normally taken in the latter part of the second year but may occasionally be postponed until early in the third year. For the major examination the student will choose a limited area of mathematics, e.g. differential topology, or several complex variables, or ring theory — and a major examiner from among the faculty. Together they will plan a program of study and a subsequent examination in that material. The aim of this study is to prepare the student for research toward the Ph.D. The minor examination will be more limited in scope and less advanced in content. The procedures are similar to those for the major examination, but its subject matter should be significantly different.

Admission to Candidacy. To be admitted to candidacy for the Ph.D. degree in Mathematics, the student must have successfully completed the qualifying examination, must demonstrate proficiency in reading French, German or Russian and must be recommended for candidacy by the department.

Dissertation and Defense. The doctoral degree will be awarded only after the submission and acceptance of an approved dissertation and after the successful defense of that dissertation.

Courses of Instruction

MATHEMATICS 101a and b. Algebra I

Groups, rings, modules. Galois theory, affine rings and rings of algebraic numbers. Multi-linear algebra. The Wedderburn Theorem. Other topics as time permits.

Mr. J. Levine

MATHEMATICS 110a. Geometric Analysis

Manifolds, tangent vectors and vector fields, Sard's Theorem and the embedding theorems. Basic properties of Lie groups. Riemannian structures and convex neighborhoods. Differential forms and DeRham's Theorem. *Mr. Palais*

MATHEMATICS 110b. Geometric Analysis

Introduction to the theory of smooth mapping: transversality and stability. *Mr. H. Levine*

MATHEMATICS 111a and b. Analysis I

Measure and integration, Hilbert and Banach spaces. The Cauchy Integral Theorem, the calculus of residues, and the maximum modulus principle. Conformal mappings. Other topics as time permits. *Mr. Jakobsen, 1st Term*
Mr. Feinberg, 2nd Term

MATHEMATICS 121a and b. Topology I

Point set topology, fundamental group, covering spaces. Simplicial complexes, elementary homology and cohomology theory with applications. Manifolds and orientation, cup and cap products, Poincare duality. Other topics as time permits. *Mr. Bruner, 1st Term*
Mr. Igusa, 2nd Term

MATHEMATICS 200. Graduate Seminar

Mr. Monsky

MATHEMATICS 201a and b. Algebra II

Mr. Irving, 1st Term
Mr. Harris, 2nd Term

MATHEMATICS 202a and b. Algebraic Geometry I

An introduction to the subject of algebraic geometry. *Mr. Eisenbud*

MATHEMATICS 203a. Algebraic Number Theory

Mr. Harris

***MATHEMATICS 204. Homological Algebra**

***MATHEMATICS 211a. Analysis II**

MATHEMATICS 211b. Analysis II

Topics in complex analysis. *Mr. Ephraim*

***MATHEMATICS 212a and b. Functional Analysis**

MATHEMATICS 221a. Topology II

Elementary homotopy theory, fibrations, obstruction theory, and spectral sequences. *Ms. Vogtmann*

MATHEMATICS 221b. Topology II

Cohomology operations, characteristic classes, classifying spaces, elementary cobordism. *Mr. Bruner*

***MATHEMATICS 222. Geometry of Manifolds**

***MATHEMATICS 250. Riemann Surfaces**

The following *Non-credit* seminars run throughout the year; graduate student participation is encouraged.

Topology Seminar

Messrs. Brown and J. Levine

Fellowship of the Ring — Seminar in Commutative Algebra

Messrs. Buchsbaum and Eisenbud

Seminar in the Geometry of Singularities

Messrs. J. Levine and Eisenbud

Algebraic Geometry Seminar

Mr. Matsusaka

***Seminar of Artin Rings and Representation Theory**

MATHEMATICS 299a and b. Readings in Mathematics

Staff

MATHEMATICS 301a. Topics in Algebraic Geometry

Mr. Adler

***MATHEMATICS 302a. Algebraic Geometry**

***MATHEMATICS 302b. Arithmetic Algebraic Geometry**

MATHEMATICS 311b. Topics in Analysis

To be announced

***MATHEMATICS 312. Several Complex Variables**

MATHEMATICS 320b. Theory of Fields

Mr. Palais

MATHEMATICS 321b. Algebraic Topology III

Mr. Brown

***MATHEMATICS 322a. Differential Topology**

***MATHEMATICS 324b. Lie Groups**

***MATHEMATICS 335a and b. Non-Commutative Algebra**

***MATHEMATICS 336b. Introduction to Singularities**

MATHEMATICS 399a and b. Readings in Mathematics

Staff

MATHEMATICS 401 — 411. Research

Independent research for the Ph.D. degree.

401. *Mr. Auslander*

405. *Mr. J. Levine*

409. *Mr. Schwartz*

402. *Mr. Brown*

406. *Mr. Matsusaka*

410. *Mr. Eisenbud*

403. *Mr. Buchsbaum*

407. *Mr. Monsky*

411. *Mr. Mayer*

404. *Mr. H. Levine*

408. *Mr. Palais*

MUSIC

Objectives

The graduate program in Music, leading to the degrees of Master of Fine Arts and Doctor of Philosophy, is designed to provide a command of the craft of composition and an understanding of the nature, structural basis, and historical development of music.

Two general fields of study are offered in music:

1. *Musical Composition and Theory*. This program, emphasizing composition and studies in theory and analysis, leads to the degrees of Master of Fine Arts and Doctor of Philosophy.

2. *History of Music*. This program, emphasizing studies in musical history and analysis (the balance between the two is flexible and is determined individually by each student in consultation with the faculty), leads to the degrees of Master of Fine Arts and Doctor of Philosophy.

Students must specialize in one of these areas but are expected to acquire a background in both.

Admission

Only a limited number of students will be accepted. The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to this area of study.

Applicants for study in musical composition and theory are required to submit, in addition to a transcript of their undergraduate records, evidence of qualification in the form of examples of original work in musical composition and advanced work in musical theory. Applicants for admission in the history of music should submit examples of their prose writing on music as evidence of their ability to handle the language and specialized vocabulary. Undergraduate theses or term papers will be satisfactory. History applicants wishing to specialize in analysis should also submit examples of advanced work in musical theory. This work should be submitted together with the formal application for admission.

All applicants are expected to have some proficiency at the piano or on an orchestral instrument. Information about this should be furnished when making formal application. A departmental written test in basic musicianship and analysis will be sent to all applicants; answers are to be submitted by mail on or before February 15.

Admission is granted for one academic year at a time. Students in residence must make formal application for readmission to the Department on or before the final date specified in the Academic Calendar for filing "Application for Financial Aid." Readmission will be refused in cases where students have not demonstrated a capacity for acceptable graduate work.

Faculty

Professor Margaret H. Bent, *Chairman*

Professor Martin Boykan, *Co-Chairman and Director of Graduate Studies*

Professor Arthur V. Berger

Professor Paul H. Brainard

Professor Robert L. Koff, *Director of Performing Activities*

Professor Harold S. Shapero, *Director of Electronic Studios*

Professor Seymour J. Shifrin

Professor Caldwell Titcomb
Associate Professor James D. Olesen
Associate Professor Joshua Rifkin
Assistant Professor Ashenafi Kebede
Assistant Professor Allan R. Keiler, *Theory Coordinator*
Lecturer Edward Nowacki
Instructor Allen L. Anderson
Instructor Timothy V. Clark
Instructor Marjorie Cohen
Instructor David M. Hoose
Instructor John K. Knowles
Instructor Conrad M. Pope
Performing Artist-in-Residence Timothy C. Aarset
Performing Artist-in-Residence Maynard Goldman
Performing Artist-in-Residence Rosalind D. Koff

Degree Requirements

Master of Fine Arts

Language Requirements.

Group A: French, German, Italian.

Group B: Spanish, Latin, Hebrew, Greek (and other languages at the discretion of the music faculty).

Candidates for the master's degree in Musical Composition and Theory must possess a reading knowledge of one language from Group A.

Candidates for the master's degree in History of Music must possess a reading knowledge of two languages in Group A.

Foreign language course credits will not in themselves constitute fulfillment of the language requirements for advanced degrees. All candidates must pass language examinations set or approved by the music faculty and offered periodically during the academic year. Students are urged to take these examinations at the earliest feasible date. In case of failure, an examination may be taken more than once.

Instrumental Proficiency. At least moderate proficiency at the piano is required of all candidates for advanced degrees.

Residence Requirements. Six full courses or the equivalent in half-courses at the graduate level, completed with distinction, and a thesis are required of all candidates.

The department normally allows credit for no more than one full course taken at another institution.

In general, the program of course work is completed in two academic years. It is suggested that students pursue no more than three full courses in any one year.

Examinations. Shortly after their arrival, new graduate students will be expected to take an examination in the standard literature of music from the early eighteenth century to the present. In cases of failure, examinations may be repeated.

Before the end of their second year of study, candidates for the degree of Master of Fine Arts must demonstrate their competence in both theory and history by means of a written general examination in their major field, and either by an examination or by one of the following alternatives in their minor field:

For candidates in composition, the successful completion of Music 182a (or b) or 183a (or b), or of comparable courses taken elsewhere, will be accepted in lieu of a minor general examination in music history. The faculty reserves the right to evaluate the student's accomplishment in history courses not taken at Brandeis.

For candidates in music history, competence in theory can be demonstrated by the successful completion of at least one semester of Music 227, or by a written examination.

The following timetable is suggested for major general examinations: *For candidates in composition*, the composition examination may be taken during the first year and repeated if necessary in the second; the analysis portion of the examination will normally be taken during the second year. Examinations may be repeated in the third year only in the case of a student not proceeding beyond the master's degree. *For candidates in music history*, major general examinations will normally be taken during the second year; they may be repeated in the third year at the discretion of the faculty.

Thesis. Candidates for the degree of Master of Fine Arts in music are required to submit a thesis. For candidates in musical composition and theory, this will consist of a musical composition, its scope to be approved by the music faculty. For candidates in the history of music it will be an analytical or historical study on a topic acceptable to the music faculty. Candidates in the history of music may submit, in lieu of a separate thesis, revised copies of two seminar papers that have been certified by the seminar instructor and at least one other faculty member as demonstrating a high degree of competence in research and writing. Two copies of the thesis or composition must be submitted to the department chairman in final form no later than December 1 for a February degree or March 1 for a May degree.

Doctor of Philosophy

Admission to the doctoral program is normally granted at the end of the second year of residence, and is determined by the student's performance in course work and general examinations. For candidates in music history, acceptance may be deferred pending repetition of portions of the major examinations.

Residence Requirements. A minimum of eight full courses or the equivalent in half-courses at the graduate level, completed with distinction, are required of all candidates.

In general, the program of course work will be completed in three academic years.

Applicants who have done graduate work elsewhere may apply for transfer of credit for such work; a maximum of one year of residence may be granted.

Instrumental Proficiency. At least moderate proficiency at the piano is required of all candidates.

Language Requirements. Candidates for the doctoral degree in the history of music must possess a reading knowledge of all three languages in Group A. If appropriate to the student's program, the music faculty may accept a language in Group B in lieu of Italian. Candidates in composition and theory must possess a reading knowledge of two languages in Group A.

Examinations. Candidates for the Ph.D. degree have no additional written examination requirements in their major field beyond those for the M.F.A. In the minor field, doctoral-level examinations may, if desired, be replaced by the option of an additional semester of course work completed with distinction. For candidates in composition and theory, a semester of Music 200 or 299 is suggested; for candidates in history, an additional semester of Music 227.

After meeting their language, residence, and general examination requirements, candidates for the Ph.D. must pass a special oral qualifying examination.

Admission to Candidacy. Students will be admitted to candidacy for the Ph.D. degree upon successful completion of the written and oral qualifying examinations, fulfillment of the language requirements, and the approval of a dissertation topic.

Dissertation. Candidates for the degree of Doctor of Philosophy in Musical Composition and Theory must submit an original musical composition and a thesis on a theoretical or analytical subject. Candidates for the degree of Doctor of Philosophy in History of Music must submit a dissertation on an historical or analytical subject. Two copies of the doctoral dissertation, as well as an abstract of the dissertation not to exceed six hundred words in length, should be submitted to the department or committee chairman no later than December 1 for a February degree and March 1 for a May degree of the academic year in which the Ph.D. degree is to be conferred.

Written dissertations should demonstrate the competence of the candidate as an independent investigator, his or her critical ability, and effectiveness of expression. Upon completion of the dissertation the candidate will be expected to defend it in an oral examination.

Courses of Instruction

Except in the rarest circumstances, graduate credit is not allowed for courses numbered below Music 165.

***MUSIC 168aR. Orchestration**

***MUSIC 171a. History of Music and Drama Criticism**

MUSIC 180bR. Ethnomusicology

An introduction to the theory and methodology of ethnomusicology as a study of music in the context of world cultures. Appropriate sound examples will be played in class, with particular attention to the musical styles of Asia (China, India, Indonesia and Japan).

Mr. Kebede

MUSIC 182aR. Medieval and Renaissance Periods

Selected topics in the history of music *ca.* 1600.

Ms. Bent

***MUSIC 183aR. Baroque and Pre-Classical Periods**

***MUSIC 184a. Classical and Romantic Periods**

MUSIC 185a. Twentieth Century

Selected topics in the history and literature of music since 1900.

Mr. Pope

MUSIC 195a. Electronic Music

Composition, notation and recording of electronic music. Technical electronics as they apply to musical problems.

Mr. Shapero

MUSIC 197a. Tutorial in Music History and Literature

Analytical problems in tonal music.

Mr. Shapero

MUSIC 197b. Tutorial in Musical Analysis

Basic analytical problems of the music of the twentieth century, approached through detailed study of a few representative works.

Mr. Pope

MUSIC COLLOQUIUM

Discussions of special topics led by the faculty and occasional guests. Some of the sessions will include performances of new works. Required of all graduate students. *Non-credit.*

Staff and Visiting Lecturers

MUSIC 200. Proseminar in Musicology

A survey of the principal subject matters, problems, and techniques comprising the discipline of musicology.

Ms. Bent, 1st Term

Mr. Brainard, 2nd Term

MUSIC 203. Advanced Musical Analysis

Special analytic problems of structural interpretation with emphasis on tonal form and intrinsic relations. Intensive and detailed analysis of scores in terms of such considerations as the premises of the tonal system, Schenker's concept of musical unity, serial organization. Questions of methodology and terminology raised by the "new theory."

Mr. Berger, 1st Term

Mr. Shifrin, 2nd Term

***MUSIC 221a. Seminar in the Music of the Middle Ages**

***MUSIC 222. Seminar in the Music of the Renaissance**

MUSIC 223. Seminar in Baroque Music

Studies in historical developments in music of the seventeenth and eighteenth centuries. Typical projects will include: the cantatas of J.S. Bach; seventeenth century keyboard music; history of cantata and oratorio in the seventeenth century; sonata, suite, concerto; Baroque opera.

Mr. Brainard

***MUSIC 224. Seminar in Pre-Classical and Classical Music**

MUSIC 225. Seminar in Romantic Music

Selected topics in music from Beethoven, Weber, and Schubert to Strauss, Mahler, and Sibelius. Some consideration will be given to Impressionism and to the relations between music and the other arts.

Mr. Keiler

***MUSIC 226b. Topics in the History and Literature of Western Music Theory**

MUSIC 227. Proseminar in Theory and Composition

Technical projects in theory and composition; tonal forms and contrapuntal techniques.

Mr. Boykan, 1st Term

Mr. Berger, 2nd Term

MUSIC 228a. Seminar in Twentieth Century Techniques

Exercises in composition employing musical materials and organizational methods developed since about 1900, accompanied by analysis of works of composers from Debussy to the present.

Mr. Shifrin

***MUSIC 233a. Topics in Analysis**

***MUSIC 244b. Berlioz**

***MUSIC 246aR. Stravinsky**

***MUSIC 265a. Advanced Orchestration**

***MUSIC 270. Seminar in Serial Music**

MUSIC 292. Seminar in Composition

Group meetings and individual conferences. Opportunities for the performance of student works will be provided. *Messrs. Boykan and Shifrin*

MUSIC 299a and b. Individual Research and Advanced Work

Staff

MUSIC 400 — 408. Dissertation Research

Required of all doctoral candidates

400. *Mr. Berger*

405. *Mr. Titcomb*

401. *Mr. Boykan*

406. *Ms. Bent*

402. *Mr. Brainard*

407. *Mr. Keiler*

403. *Mr. Shapero*

408. *Mr. Rifkin*

404. *Mr. Shifrin*

Electronic Music Studios

Two studios with facilities for the composition of electronic music are available to qualified student composers. *Director: Mr. Shapero*

THE PHILIP W. LOWN SCHOOL OF NEAR EASTERN AND JUDAIC STUDIES

The Lown School is the center for all programs of teaching and research in the areas of Near Eastern and Judaic Studies. The School includes the Department of Near Eastern and Judaic Studies and the Hornstein Program for Jewish Communal Service. The Department offers academic programs in the major areas of its concern. The Hornstein Program is a professional training program leading to the Master of Arts degree in Jewish Communal Service. It makes full use of academic resources of the Department of Near Eastern and Judaic Studies and other departments in the university.

NEAR EASTERN AND JUDAIC STUDIES

Objectives

The graduate program in Near Eastern and Judaic Studies, leading to the Master of Arts and Doctor of Philosophy degrees, is designed to train scholars and teachers in the various cultures of the Near East and of classical and modern Judaic civilization, and to advance scholarly research in these areas. This work is done mainly through study of the relevant languages and literatures and the interpretation of historical sources.

Admission

The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to this department. All candidates are required to have excellent control of Hebrew.

Faculty

Professor Marvin Fox, *Chairman and Director of the Lown School*: Jewish philosophy. Rabbinic thought. Modern Jewish thought.

Professor Emeritus Alexander Altmann.

Professor Naftali C. Brandwein: Modern Hebrew literature.

Professor Emeritus Nahum Norbert Glatzer.

Professor Benjamin Halpern: Modern Near East history. Political and social history of Palestine and Israel. Modern Jewish history.

Professor Alfred L. Ivry: Jewish philosophy. Islamic philosophy.

Visiting Professor Israel Levin: Medieval and modern Hebrew literature.

Professor Nahum M. Sarna: Biblical studies. Dead Sea Scrolls.

Professor Marshall Sklare: Sociology of the Jewish community.

Professor Dwight W. Young: Ancient Near East civilization. Assyriology. Ugaritic. Biblical studies.

Associate Professor Michael Fishbane: Biblical studies. Dead Sea Scrolls.

Associate Professor Leon A. Jick: Contemporary Jewish history.

Associate Professor Avigdor Levy: Arabic language and culture. Modern Middle East history and studies.

Associate Professor Benjamin C. I. Ravid: Jewish history.

Associate Professor Bernard Reisman: Jewish communal service.

Associate Professor Joshua Rothenberg: Yiddish. East European Jewish history.

Assistant Professor Miriam Galston: Islamic philosophy. Islamic thought.

Assistant Professor Ariella D. Goldberg: Hebrew.

Assistant Professor Aaron Katchen: Second Commonwealth and Hellenistic Judaism.

Assistant Professor Reuven Kimelman: Talmud and Rabbinic literature.

Lecturer Charles Cutter: Judaic bibliography.

Program of Study

Among the main fields in the area of Near Eastern and Judaic Studies in which courses are being given in the Graduate School are:

Semitic Languages and Literatures.

History of Ancient Near East.

Islamic Studies.

Biblical Studies.

Talmud and Rabbinic Literature.

Jewish History of all periods.

Medieval Jewish Philosophy.

Modern Jewish Philosophy.

Jewish Mysticism.

Hebrew Literature.

The Modern Near East.

Contemporary Jewish Studies.

Fields of study not listed here may be approved.

Degree Requirements

Master of Arts

Residence Requirements. The student is required to complete a minimum of eight semester courses in the department. While programs of study are flexible and are adjusted to the interests of the individual student, all degree candidates are required to complete a core program. This program consists of one semester-course in each of the following areas: Bible, Jewish history, Jewish philosophy or Jewish thought, Hebrew literature. Students may also be required to take courses in other departments. It is possible for very well-prepared students to complete the M.A. program in one year, but most students require additional time.

Language Requirements. Every candidate for the Master of Arts degree must show proficiency in Hebrew and in French or German. In special cases, another modern foreign language may be substituted for one of the two listed here. The foreign language requirements are to be satisfied by examination not later than eight weeks before a candidate is to receive the degree.

Examination. A two-hour oral examination is given at the conclusion of the student's residence. This examination may be either the first of the Ph.D. oral comprehensive examinations (for candidates who will go on to the Ph.D.) or a general comprehensive examination for terminal M.A. candidates. The latter examination is designed to test the student's knowledge in various subjects of Judaica and his/her ability to relate this knowledge to the larger areas to which those subjects belong. A student who fails to pass the examination, or any part of it, may apply for re-examination, which will take place not earlier than one semester after the date of the first examination.

Thesis. In certain cases, the student is advised to write a thesis which must be submitted no later than May 1 of the year in which the degree is to be conferred. In such cases, the student registers in the Dissertation Colloquium (NEJS 400) which then counts as one of the required courses.

Doctor of Philosophy

Residence Requirement. Although there is a two-year minimum residence requirement, three years of course work are normally required of all candidates for the Ph.D. The student is expected to carry the equivalent of twelve credit units per semester during this period. Additional course work may be required of individual students at the discretion of the faculty.

Language Requirements. All candidates for the Ph.D. are required to show proficiency in Hebrew and in at least two modern foreign languages. The specific modern languages are to be determined by the student's adviser in light of the requirements for research in the particular area to be pursued. Additional languages may be required as they are judged necessary for research and scholarship in the student's special field. Language requirements should be completed no later than the second year of residence.

Examinations. After completion of course work each student is required to pass three comprehensive examinations in three areas of study. These are usually two-hour oral examinations conducted by at least three members of the graduate faculty. At the discretion of the faculty, written examinations may also be required. A student who fails to pass an examination may apply to take it a second time. This re-examination may take place no earlier than one semester after the date of the first examination.

Admission to Candidacy. A student registered for studies leading to the Ph.D. degree becomes a candidate for that degree upon fulfillment of the residence requirements, when he/she has passed the comprehensive examinations, fulfilled the language requirements, and has had a dissertation proposal approved by the department.

Dissertation and Defense. The student will discuss plans for a dissertation with the chairman of the department and the dissertation supervisor. The conferences on the planning and the program of the dissertation take place in the Dissertation Colloquium (NEJS 400), a course in which the candidate is to register. Normally, the candidate will continue working on the dissertation after the completion of residence, i.e., as a non-resident student. The dissertation must demonstrate the candidate's thorough knowledge of the field and competence in independent research, and must constitute an original contribution to knowledge. Two copies of the dissertation, one of which must be the original typescript, are to be deposited in the office of the department chairman not later than April 1 of the year in which the candidate plans to take the degree. A defense of the dissertation will be held.

Courses of Instruction

NEJS 101. Introductory Literary Arabic

A first course in literary Arabic covering the essentials of grammar, reading, pronunciation, translation and composition. *Mr. Levy*

NEJS 102. Intermediate Literary Arabic

Study of advanced grammatical and syntactical forms. Readings in classical and modern texts. Drills in pronunciation and composition.

Prerequisite: NEJS 101 or its equivalent.

Mr. Levy

***NEJS 103a. Introduction to Islamic Civilization and Institutions**

***NEJS 104bR. Aramaic Dialectology**

NEJS 106. Elementary Ugaritic

Grammar and poetic texts will be read with constant reference to biblical literature. Students may take this course for credit more than once since the tablets read in class will not repeat those studied in former years.

Prerequisite: Knowledge of biblical Hebrew and/or Akkadian.

Mr. Young

***NEJS 108b. Comparative Grammar of Semitic Languages**

NEJS 109a. The Patriarchal Narratives in the Light of Ancient Near East Thought

A reading of Genesis, Chapters 11-50, and a study of the historical and literary background that gave rise to traditions of Hebrew origins.

Prerequisite: Hebrew 6 or equivalent.

Mr. Young

***NEJS 110b. Problems in Biblical History**

NEJS 112a. Biblical Hebrew

A detailed investigation into the phonology, morphology, grammar and syntax of biblical Hebrew. Gesenius' grammar will be examined and supplemented.

Mr. Fishbane

***NEJS 112b. Deutero-Isaiah**

***NEJS 113a. Targum**

***NEJS 114a. The Book of Amos**

NEJS 114b. The Art of the Biblical Narrative

An intensive evaluation of the bearing of contemporary literary theory and aesthetics on the biblical narrative. Selections from such works will be studied, but the principal focus will be on close readings of several genres of biblical prose (epic, historical, narrative, legends, parables and the like). Attention will be given to the techniques of composition (in small units and in larger compositional cycles) and to the semantics of the biblical narrative. Problems of theme, motif and structure will be dealt with. Comparisons will be drawn to oral and written literature of the ancient and modern world, where pertinent.

Prerequisite: Hebrew 6 or permission of instructor.

Mr. Fishbane

***NEJS 115a. Biblical Literature of the Early Post-Exilic Period**

NEJS 116a. The Book of Jeremiah

Selected readings (in Hebrew). An intensive study of the exegetical problems, the historical background in the light of archaeological finds, the personality and biography of the prophet, the leading ideas and concepts of the book.

Prerequisite: Hebrew 6.

Mr. Sarna

***NEJS 116b. The Problem of Evil in Jewish Philosophy**

***NEJS 117b. Dead Sea Scrolls**

***NEJS 118. Book of Psalms**

NEJS 119aR. The Book of Ezekiel

Selected readings (in Hebrew). An intensive study of the exegetical problems, the historical background in the light of archaeological finds, the personality and biography of the prophet, the leading ideas and concepts of the book.

Prerequisite: Hebrew 6.

Mr. Sarna

***NEJS 119b. The Minor Prophets: Nahum, Habakkuk, Zephaniah**

NEJS 120b. Intermediate Talmud

A more intensive study of selected portions of Treatise Sanhedrin not dealt with in NEJS 53a. Greater emphasis will be placed on the understanding of the classical commentaries. Students will be expected to develop the ability to work through a section of the text on their own.

Prerequisite: NEJS 53a or permission of instructor.

Mr. Kimelman

***NEJS 123b. Classical Biblical Commentaries**

NEJS 124a. Modern Jewish-Christian Religious Thought

An examination of major Jewish and Christian thinkers of the 19th and 20th centuries, emphasizing their creative role in the formation of distinctive religious ideas. Primary source materials will be used for the assigned readings. The course will be taught jointly by two specialists in the respective areas of Jewish and Christian thought. One main concern will be to explore the variety of ways in which the major religious thinkers respond to each other and to modern culture.

Messrs. Fox and Johnson

NEJS 125a. Midrashic Literature: *Mekhilta d'Rabbi Yishmael

NEJS 125b. Midrashic Literature: Sifre Deuteronomy

An analysis of the central ideas, the literary structure and the midrashic method of the Sifre Deuteronomy. Emphasis will be placed on a close reading of the text with a view to developing in the students the capacity to do an independent analysis of midrashic literature. Attention will also be given to the general background and development of Midrash. This course may be taken for credit by students who took NEJS 125b, Spring 1978.

Prerequisite: Hebrew 6 or equivalent.

Mr. Kimelman

NEJS 127a. Hellenistic Jewish Literature

A study (in English) of the impact of Greek culture on Jewish thought via a sampling of the poetry, drama, biblical exegesis, philosophy and history composed by Jews in Greek during the period 332/BCE-ca. 100 CE. Included are selections from the Apocrypha, Pseudepigrapha, and the writings of Philo of Alexandria as well as from the numerous fragments of this literature preserved in the writings of the Church Fathers. All readings will be in English.

Mr. Katchen

NEJS 127b. The Jewish Liturgy

A study of the literary structure, theological framework, and historical development of the Sabbath and daily liturgy. Emphasis will be placed on the interplay of the literary forms and theological ideas in each prayer and within the flow of the complete service. Concomitantly, works on the problematics of prayer will be studied. Scholars such as Eliezer Berkovitz, Daniel Goldschmidt, Joseph Heinemann, Abraham Herschel, Issachar Jacobson, and Tryggve will be read.

Prerequisite: Hebrew 6.

Mr. Kimelman

***NEJS 128a. History of the Second Jewish Commonwealth: To the End of the Maccabean Period**

***NEJS 128b. History of the Second Jewish Commonwealth from Herod to Bar Kokhba**

***NEJS 129a. Philo Judaeus of Alexandria**

***NEJS 129b. Alexandria: The City and the Idea**

***NEJS 131a. History of Jewish Philosophy: From Antiquity to the Twelfth Century**

***NEJS 131b. History of Jewish Philosophy: From the Twelfth to the Sixteenth Century**

***NEJS 132b. Philosophy of the Kalam**

NEJS 135a. Neoplatonic Elements in Islamic and Jewish Philosophy

This course will probe that major strain of classical and medieval philosophy which bridged mystical and rational traditions, and which was regarded by many as compatible with religious systems of belief. The metaphysical core of Neoplatonism will first be disclosed and then examples of its adaptation by Islamic and medieval Jewish philosophers will be studied.

Among the books to be studied are English translations of portions of the writings of Plotinus, Proclus, Al-Kindi, Isaac Israeli, Shelomo ibn Gabirol, and Judah Halevi.

Mr. Ivry

NEJS 135b. Aristotelian Elements in Islamic and Jewish Philosophy

Medieval Aristotelianism is faithful to Aristotle, but in its fashion. That fashion is decisive in Islamic and medieval Jewish philosophy. It will be explored by first ascertaining Aristotle's views in the areas of physics, metaphysics, and ethics; and then by tracing expressions of these ideas in English translations of writings of Alfarabi, Avicenna, Abraham ibn Daud, and Maimonides. *Mr. Ivry*

***NEJS 138a. Modern Hebrew Literature**

***NEJS 138b. Modern Hebrew Literature**

NEJS 139a. Modern Hebrew Literature

A study of major examples of modern Hebrew literature in the period 1918-1945.
Prerequisite: Hebrew 6 or equivalent. *Mr. Levin*

NEJS 139b. Modern Hebrew Literature

A study of major examples of modern Hebrew literature from 1945 to the present.
Prerequisite: Hebrew 6 or equivalent. *Mr. Levin*

NEJS 140a. The Jews in Europe to 1700

An examination of the phenomenon of Jewish survival in the European Diaspora: the Jews in the Roman Empire; the origins of anti-semitism; the Jewish religious heritage; the medieval Jewish community; the medieval church, society, economy and the Jews; the expulsion of the Jews from Western Europe. *Mr. Ravid*

NEJS 140b. The Jews in Europe From 1492-1750

The Jews in the Renaissance; the Marranos; the reformation, counter-reformation and the Jews; Eastern Europe, mysticism, messianism and hassidism; *raison d'état* and the readmission of the Jews to Western Europe; court Jews, Prussia, and the Berlin enlightenment; emancipation; from Wissenschaft des Judentums to Jewish studies; some modern philosophies of Jewish history. *Mr. Ravid*

***NEJS 141a. Introduction to Jewish Historiography**

NEJS 141b. Jews, Catholics and Protestants in Western Europe, 1517-1867

A study of the religious, legal, social and economic status of Catholics, Protestants and Jews in France, Holland and England from the Reformation to the rise of the modern nation state. *Messrs. Ravid and Cummings*

***NEJS 142b. Economic History of the Jews to the Emancipation**

***NEJS 144a. Jewish Communities in the Muslim Near East in the 19th and 20th Centuries**

***NEJS 144b. Nationalism in the Modern Near East**

NEJS 145b. The Near East in the Twentieth Century

History of the Near East from World War I to the present. Topics include the establishment of the modern states; social and political transformation; intra-regional relations; the Arab-Israeli conflict; the Near East in world politics. *Mr. Levy*

NEJS 147a. History of the Near East and the Ottoman Empire, 1500-1914

A historical survey of the Near East from the establishment of the Ottoman Empire as the area's predominant power to World War I. Topics include Ottoman institutions, their transformation and impact on Near Eastern society; the Ottoman empire as a world power; decline and European imperialism; 19th century reform and westernization.

Mr. Levy

***NEJS 151a. Introduction to Islamic Philosophy**

NEJS 160a. The Emergence of the American Jewish Pattern, 1654-1967'

See JCS 160a for description. May not be taken for credit by students who have taken NEJS 106a or b in previous years.

Mr. Jick

NEJS 161a. American Jewish Life and Institutions

A survey of the contemporary community and the diverse forms of Jewish identification which characterize American Jewish life. Reform, Conservative, and Orthodox Judaism; problems of Jewish family life including intermarriage; problems of relationship to the general society and to other ethnic groups. Primarily for undergraduates. Enrollment limited to 40.

Mr. Sklare

***NEJS 163a. The Sociology of the American Jew**

NEJS 164b. The Sociology of the American Jewish Community

The role of the sub-community in American society; Jewish communal services in medieval and modern times; contemporary American Jewish communal reforms; religion, community relations, overseas aid, social welfare, and relationships with Israel.

Mr. Sklare

***NEJS 166a. Modern Jewish Intellectual History to 1870**

***NEJS 166b. Modern Jewish History since 1870**

***NEJS 168a. Jewish Life and Institutions in Eastern Europe, 1880-1918**

NEJS 168b. History of the Jews in the Soviet Union

A study of the history, legal and political status of the Jews since the establishment of the Soviet Union in 1917. Jews as an ethnic and religious group in the context of the Soviet political structure and nationality policies. Socio-economic, demographic, cultural aspects; Oriental Jewish groups; relationship to Zionism and Israel; new Jewish militancy and emigration. A comparison with the situation of the Jews in other East European Communist countries.

Mr. Rothenberg

NEJS 169aR. The Destruction of European Jewry

The function of anti-semitism in the comparative history and politics of Nazism; the Holocaust organization and the victims' responses; allied policies and Western reactions; post-war punishment and reparations. Interdisciplinary approaches to historical sociology and legal philosophy will be applied.

Mr. Jick

NEJS 170bR. Jewish Life and Institutions in Eastern Europe, 1918-1939

An examination of the various facets of East European Jewish culture values and way of life as manifested in Jewish literature and folklore and in the social, political and religious movements and institutions of the period. Primary attention will be given to Poland, which was the major center of Jewish cultural and religious life in Eastern Europe during this period.

Mr. Rothenberg

***NEJS 171b. Trends and Values in Yiddish Literature**

***NEJS 173b. Seminar in Yiddish Literature**

NEJS 175a. History of Zionism

The rise and development of the Zionist idea, Zionist parties, Zionist politics, and Zionist diplomacy in relation to Jewish history and international affairs from 1880 to 1950. Zionism today. *Mr. Halpern*

NEJS 182a. Introduction to Jewish Bibliography

The aim of the course is to acquaint students in the various fields of Judaic studies with the general bibliographic tools and the bibliographies in the major sub-fields. The course will concentrate on general Judaica/Hebraica bibliographies, indexes, etc. and on subject bibliographies in such fields as Jewish history, Jewish philosophy, Hebrew language and literature, anti-Semitism, Holocaust studies, etc. *Mr. Cutter*

NEJS 182aR. Introduction to Jewish Bibliography

See NEJS 182a. *Mr. Cutter*

***NEJS 187b. Biblical Images, Motifs and Ideas in Modern Hebrew Poetry**

***NEJS 208a. Mantic, Magical and Oracular Traditions in Ancient Israel: Traits and Survivals**

NEJS 210a. Seminar on the Institutional Development of the American Jewish Community

Evolving institutional patterns in the American Jewish experience. *Mr. Jick*

NEJS 210b. Seminar on Strategies of Jewish Continuity in America: Options and Alternatives

Ideologies of acculturation and of Jewish continuity in America. *Mr. Jick*

NEJS 215b. Topics in American Jewish Communal Organization

An examination of the structure of the American Jewish community with particular emphasis on gaining an understanding of the intricacies of the variegated network of local and national Jewish organizations. Emphasis is placed on differences and similarities between organizations and upon the assumptions made by different agencies and institutions in pursuing their objectives. The relationship between the formal and the informal Jewish community is explored. *Mr. Sklare*

NEJS 223b. Readings in the Dead Sea Scrolls *Mr. Sarna*

***NEJS 224b. History of the Biblical Canon and Ancient Versions**

NEJS 225a. Seminar in Phoenician and Aramaic Inscriptions

A seminar in Hebrew, Moabite, Phoenician and early Aramaic inscriptions. Texts will be read in their original script. Special emphasis will be placed on linguistic, literary, religious and historical features. *Mr. Sarna*

***NEJS 225b. North-West Semitic Inscriptions**

***NEJS 226a. Problems in Biblical Scholarship**

***NEJS 226b. Topics in Biblical Religion**

NEJS 228b. Seminar on the Greek Versions of the Bible

The Greek versions will be studied in comparison with the received Hebrew text, the Scrolls from the Judean Desert, and the Targumim. Knowledge of Greek is desirable, but not required. *Mr. Katchen*

***NEJS 230. Seminar in Medieval Jewish Philosophy**

NEJS 231. Seminar in Medieval Islamic Philosophy

The political philosophy of Alfarabi and Avicenna. This course will consist of a systematic study of the major classical texts of early Islamic political thought in English translation. The emphasis will be on analyzing and comparing the thought of Alfarabi and Avicenna; relating their teachings to the Greek political tradition and identifying Alfarabian and Avicennan sources of the political portions of Maimonides' *Guide for the Perplexed*. *Ms. Galston*

***NEJS 233a. Seminar in Islamic Philosophy**

***NEJS 233b. Quest and Existence in the Works of J.C. Brenner, N. Gnessin and S.Y. Agnon**

NEJS 234. Seminar in Late Medieval Jewish Philosophy

Topic for 1978-79: Hasdai Crescas' *Light of the Lord*. *Mr. Ivry*

***NEJS 236a. Theories of Prophecy in Medieval Jewish Philosophy**

***NEJS 236b. "Articles of Faith" in Medieval Jewish Philosophy**

NEJS 237a. Medieval Hebrew Poetry *Mr. Levin*

***NEJS 238 Major Trends in Modern Hebrew Literature**

***NEJS 239a. Conflict of Ideas in Modern Hebrew Literature**

NEJS 239b. Seminar in Hebrew Literature *Mr. Levin*

NEJS 254a. The Structure of Jewish History

Introduction to methods of historical explanation. The comparative history of the Jewish-gentile relationship: problems of social estrangement, political (legal) emplacement, cultural (religious) opposition from Greco-Roman to modern times. *Mr. Halpern*

NEJS 254b. The Problem of Modern Anti-Semitism

A comparative analytical study of political and other forms of anti-Semitism in America, England, France and Germany since the Religious Wars. *Mr. Halpern*

NEJS 260a. Seminar on the Philosophical Foundations of Jewish Ethics: Ancient and Medieval *Mr. Fox*

NEJS 260b. Seminar on the Philosophical Foundations of Jewish Ethics: Modern *Mr. Fox*

NEJS 262a. Problems in the Sociology of the American Jew

A seminar. Analysis of selected research studies in American Jewish life and problems. Studies range from those dealing with the immigrant ghetto to studies of contemporary suburbia. *Mr. Sklare*

***NEJS 266a. The Rise of Denominations in Modern Judaism**

NEJS 272a. The Jews in Venice to 1797

An attempt to gain insight into the dynamics of Jewish survival up to the emancipation through an in-depth examination of a leading Jewish community of the Renaissance and early modern times. The emphasis will be placed on legal and economic history in the context of the general Italian and Venetian setting. Attention will be paid to the utilization of Jewish and non-Jewish sources. Similar issues in other Jewish communities will be studied and students will undertake, according to their background and interests, research in published or unpublished Hebrew or Italian documents. *Mr. Ravid*

The following courses, offered in the Department of Classical and Oriental Studies, are of special interest to NEJS students studying in the fields of Ancient Near East, Semitics, and Biblical Studies. Please consult CLORS for descriptions.

***CLORS 111b. The Archaeology of Syria-Palestine**

CLORS 117b. The Archaeology of Mesopotamia and Iran *Mr. Todd*

***CLORS 145b. History of Ptolemaic Egypt**

CLORS 150. History of Egyptian Civilization *Mr. Žabkar*

***CLORS 151b. History of Egypt Under Roman Rule**

***CLORS 165. History of Mesopotamia**

CLORS 166a. Topics in Mesopotamian History: Second Millennium B.C.
Ms. Morrison

CLORS 167b. Topics in Mesopotamian History: First Millennium B.C.
Ms. Morrison

***CLORS 168a. The Hellenistic Period in Mesopotamia**

AKKADIAN 101. Elementary Akkadian *Ms. Morrison*

***AKKADIAN 102a. Advanced Akkadian I: Assyrian Royal Inscriptions**

***AKKADIAN 102b. Advanced Akkadian II: Literary Texts**

AKKADIAN 103. Advanced Akkadian III: Second Millennium Texts
Ms. Morrison

***AKKADIAN 104a. Advanced Akkadian IV: Wisdom Literature**

***COPTIC 101. Coptic Language**

EGYPTIAN 101. Elementary Egyptian *To be announced*

***EGYPTIAN 102. Advanced Egyptian I: Selected Texts of the Ptolemaic Period**

EGYPTIAN 103. Historical Inscriptions of the 18th Dynasty *Mr. Žabkar*

***EGYPTIAN 104. Advanced Late Egyptian: Texts of the Ramesside Period**

***EGYPTIAN 105. Advanced Egyptian II: Old Egyptian**

***HITTITE 101. Elementary Hittite**

***SUMERIAN 101. Elementary Sumerian**

NEJS 318 — 338. Reading Courses

Special tutorials for advanced graduate students.

318a and b.	Readings in Arabic Literature	<i>Mr. Levy</i>
319a and b.	Readings in Arabic Philosophy	<i>Ms. Galston</i>
320a and b.	Readings in Islamic Philosophy	<i>Mr. Ivry</i>
321a and b.	Readings in Medieval Jewish Philosophy	<i>Messrs. Fox and Ivry</i>
322a and b.	Readings in Modern Jewish Philosophy	<i>Mr. Fox</i>
323a and b.	Readings in Jewish Thought	<i>Mr. Fox</i>
324a and b.	Readings in Modern Hebrew Literature	<i>Mr. Brandwein</i>
325a and b.	Readings in Biblical Texts	<i>Mr. Sarna</i>
326a and b.	Readings in Biblical Literature	<i>Mr. Fishbane</i>
327a and b.	Readings in Ancient Near Eastern Civilization	<i>Mr. Young</i>
328a and b.	Readings in Ancient Near Eastern Languages	<i>Mr. Young</i>
329a and b.	Readings in Modern Near East and Modern Jewish History	<i>Mr. Halpern</i>
330a and b.	Readings in the Sociology of the Jewish Community	<i>Mr. Sklare</i>
331a and b.	Readings in Yiddish Literature	<i>Mr. Rothenberg</i>
332a and b.	Readings in American Jewish History	<i>Mr. Jick</i>
333a and b.	Readings in the History of the Jews in Europe to 1800	<i>Mr. Ravid</i>
337a and b.	Readings in Talmudic and Midrashic Literature	<i>Mr. Kimelman</i>
338a and b.	Readings in Second Commonwealth and Hellenistic Judaism.	<i>Mr. Katchen</i>

NEJS 401 — 411. Dissertation Colloquium

Independent research for the Ph.D. degree.

401. <i>Mr. Brandwein</i>	404. <i>Mr. Halpern</i>	408. <i>Mr. Jick</i>
402. <i>Mr. Fox</i>	405. <i>Mr. Sarna</i>	409. <i>Mr. Fishbane</i>
403. <i>Mr. Ivry</i>	406. <i>Mr. Sklare</i>	410. <i>Mr. Ravid</i>
	407. <i>Mr. Young</i>	411. <i>Mr. Levy</i>

THE HORNSTEIN PROGRAM IN JEWISH COMMUNAL SERVICE

Objectives

The graduate program in Jewish Communal Service offers training for students interested in professional careers in the Jewish community. Graduates of this program serve as professional staff members in Jewish federations, Jewish community centers, Hillel foundations, and similar institutions in the Jewish community.

Admission

The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to the Hornstein Program in Jewish Communal Service. In addition, applicants are expected to submit results of either the Graduate Record Examination or the Miller Analogies Test; a statement which describes the applicant's Jewish training and background and future plans; and a sample of written material. Applicants are encouraged to arrange for a personal interview.

Faculty

Associate Professor Bernard Reisman, *Director*: American Jewish communal service.

Professor Marvin Fox, *Chairman*, Department of Near Eastern and Judaic Studies

Professor Arnold Gurin: Social welfare planning and policy.

Professor Benjamin Halpern: Modern Near East history. Political and social history of Palestine and Israel. Modern Jewish history.

Professor Robert Perlman: Social welfare planning.

Professor Marshall Sklare: Sociology of the Jewish Community.

Associate Professor Leon A. Jick: American Jewish history.

Associate Professor Joshua Rothenberg: Yiddish and East European Jewish studies.

Lecturer Mildred Guberman: Field work. Jewish communal service.

See the Department of Near Eastern and Judaic Studies and the Heller School catalog for other faculty and course offerings.

Degree Requirements

Master of Arts

Program of Study. The program of study leading to the degree of Master of Arts will consist of 14 courses including a fieldwork/internship component. Students usually take eight courses including fieldwork in the first year and six courses including an internship during the second year. Students are expected to fulfill requirements in two core areas: Judaica (classical and contemporary) and methods/practice skills.

During the last week of intersession between the first and second terms of each year, students are expected to participate in two supplemental educational programs: (1) the *Sumner N. Milender Seminar in Jewish Communal Leadership* with a visiting professional in residence, and (2) the *Betty Starr Seminar*, which involves field visits to the offices of the major Jewish national organizations in New York City.

Residence Requirement. All candidates are expected to spend two years in residence at Brandeis University.

Language Requirement. Fluency in Hebrew (or in special circumstances, Yiddish) is required. Students not meeting this requirement upon entrance must take appropriate courses, *not for credit*. The language requirement must be met by the end of the first year.

Summer Study in Israel. Directly following their first year of study, students are expected to participate in a five-week Israel seminar sponsored by the Lown Center in cooperation with the Center for Jewish Education in the Diaspora at The Hebrew University. Supplemental scholarship support is available for the seminar. The program is designed for students, most of whom have already participated in education programs in Israel.

Fieldwork/Internship. In both years of study, students have practical field experience in a Boston area Jewish educational or communal service organization. First year Jewish communal service students (JCS 248c) spend two days a week in the field and in the second year, all students have a 20 hour a week internship assignment (JCS 250). This schedule requires that students plan to be in residence through the end of May and plan for a shorter intersession than the academic calendar indicates.

Substantive Paper. A major substantive paper is developed from some phase of field practice. This is done in conjunction with the student's second year internship assignment. For research concentrators, the requirement is for a master's thesis based on a research project. The substantive paper/thesis requirement is met during the second year.

Courses of Instruction

- *JCS 115a. Biblical Literature of the Early Post-Exilic Period**
- JCS 120b. Intermediate Talmud**
See NEJS 120b. *Mr. Kimelman*
- JCS 124a. Modern Jewish-Christian Religious Thought**
See NEJS 124a. *Messrs. Fox and Johnson*
- JCS 125b. Midrashic Literature: Sifre Deuteronomy II**
See NEJS 125b. *Mr. Kimelman*
- JCS 127b. The Jewish Liturgy**
See NEJS 127b. *Mr. Kimelman*
- *JCS 138a. Modern Hebrew Literature**
- JCS 139a. Modern Hebrew Literature**
See NEJS 139a. *Mr. Levin*
- JCS 139b. Modern Hebrew Literature**
See NEJS 139b. *Mr. Levin*
- JCS 140a. The Jews in Europe to 1492**
See NEJS 140a. *Mr. Ravid*
- JCS 140b. The Jews in Europe from 1492 to 1800**
See NEJS 140b. *Mr. Ravid*
- *JCS 141a. Introduction to Jewish Historiography**
- JCS 141b. Jews, Catholics and Protestants in Western Europe, 1517-1867**
See NEJS 141b. *Messrs. Ravid and Cummings*
- *JCS 142b. Economic History of the Jews to the Emancipation**
- *JCS 144a. Jewish Communities in the Muslim Near East in the 19th and 20th Centuries**
- *JCS 144b. Nationalism in the Modern Near East**
- JCS 147a. History of the Near East and the Ottoman Empire, 1500-1914**
See NEJS 147a. *Mr. Levy*
- *JCS 149b. Politics and Society in Contemporary Israel**
- JCS 150b. Family in the United States**
See American Studies 150b. *Mr. Fuchs*
- JCS 160a. The Emergence of the American Jewish Pattern, 1654-1967**
See NEJS 160a. *Mr. Jick*
- JCS 161a. American Jewish Life and Institutions**
See NEJS 161a for description. *Mr. Sklare*

- JCS 164b. The Sociology of the American Jewish Community**
See NEJS 164b. *Mr. Sklare*
- *JCS 168a. Jewish Life and Institutions in Eastern Europe**
- JCS 168b. History of the Jews in the Soviet Union**
See NEJS 166b. *Mr. Rothenberg*
- JCS 169aR. The Destruction of European Jewry**
See NEJS 169aR. *Mr. Jick*
- JCS 170bR. Jewish Life and Institutions in Eastern Europe, 1918-1939**
See NEJS 170bR. *Mr. Rothenberg*
- JCS 172bR. Social Development in Israel**
See ANTHRO 172bR. *Mr. Weingrod*
- JCS 205a. Theory and Practice of Jewish Communal Service**
An introduction to the field of Jewish communal service. This includes a history of Jewish communal services in this country, their relationship to Jewish traditions and to developments in the field of social welfare; the settings in which Jewish services are offered and the factors making for effective organizational performance. *Mr. Reisman*
- JCS 205b. Theory and Practice of Jewish Communal Service**
The focus of the course is on developing a systematic approach to professional performance in Jewish communal organizations. This involves an examination of several theoretical approaches to helping individuals, groups and communities. What are the generic principles of the helping process? *Mr. Reisman*
- JCS 206b. Principles of Informal Education and Small Groups in Jewish Communal Service**
This course introduces students to basic principles of informal, experiential education as these are applicable in Jewish educational and communal organizations. This involves: small group dynamics, structuring learning environments, balance between affective and cognitive processes, and awareness of one's self in the role of group leader-educator. *Mr. Reisman*
- *JCS 207a. Public Policy Within the Jewish Community**
- JCS 210a. Seminar on the Institutional Development of the American Jewish Community**
Evolving institutional patterns in the American Jewish experience. *Mr. Jick*
- JCS 210b. Seminar on Strategies of Jewish Continuity in America: Options and Alternatives**
Ideologies of acculturation and of Jewish continuity in America. *Mr. Jick*
- JCS 215b. Topics in American Jewish Communal Organization**
An examination of the structure of the American Jewish community with particular emphasis on gaining an understanding of the intricacies of the variegated network of local and national Jewish organizations. Emphasis is placed on differences and similarities between organizations and upon the assumptions made by different agencies and institutions in pursuing their objectives. The relationship between the formal and the informal Jewish community is explored. *Mr. Sklare*

JCS 216b. Organization and Planning in the Jewish Community

This course will deal with the administration of organizations, inter-organizational planning, and the raising and allocation of funds in the American Jewish community. The purpose is to introduce second-year students in the Hornstein Program to practical methods and tools in these areas and ways of conceptualizing the process of administration and planning. *Messrs. Gurin and Perlman*

JCS 248c. Field Methods in Jewish Communal Service

Students are placed in selected Jewish communal organizations during the first year for two days a week of field practice. They receive individual supervision from an agency field supervisor, meet every other week with faculty for a group seminar and for periodic individual conferences. *Ms. Guberman*

JCS 250. Field Methods in Jewish Communal Service and Jewish Education

Same as JCS 248c, except students are in field work for three days a week.

Ms. Guberman and Mr. Reisman

JCS 262a. Problems in the Sociology of the American Jew: A Seminar

See NEJS 262a.

Mr. Sklare

Seminar in Contemporary Jewish Issues

During the fall semester the seminar will meet every Wednesday from 11 a.m. to 1 p.m. During the spring semester, the seminar will meet on alternate Wednesdays. *Non-credit.*

Seminar in Israel on Contemporary Jewish Issues

Offered in cooperation with the Center for Jewish Education in the Diaspora at Hebrew University. *Non-credit.*

PHILOSOPHY AND HISTORY OF IDEAS

Faculty

Professor Frederic T. Sommers, *Chairman*: Philosophy of language. Metaphysics. History of philosophy.

Professor Henry D. Aiken: Ethics. American philosophy. Social philosophy.

Professor William A. Johnson: Philosophy of religion. History of religious thought. Ethics.

Professor Morris Weitz: Philosophy of art and literature. Analytical philosophy.

Associate Professor Robert S. Greenberg: Theory of knowledge.

Assistant Professor Robert Hahn: Classical philosophy.

Assistant Professor Hyun Höchsmann: Analytic philosophy. Aesthetics.

Assistant Professor A. Mark Smith: Philosophy and history of medieval science.

Assistant Professor David B. Wong: Ethics. Social and political philosophy.

Instructor Frederic M. Katz: Logic. Philosophy of language. Philosophy of science.

Instructor Izchak Miller: Phenomenology. Continental philosophy.

PHILOSOPHY

Objectives

The graduate program in Philosophy is designed to prepare students for careers in philosophy as scholars and teachers. It places traditional emphasis on logic, epistemology, metaphysics, value theory and the history of philosophy. The number of students admitted to the program is small and the most important part of a student's work is done in small seminars and tutorials under close faculty supervision.

Admission

In addition to the general requirements for admission to the Graduate School as specified in an earlier section of this catalog, applicants for admission to the graduate program in Philosophy should have had at least one year of history of philosophy and at least one course in logic. The Department requires that applicants submit a sample of written work with their applications.

Degree Requirements

All programs will be worked out in consultation with the student's adviser.

Master of Arts

Generally only candidates for the Ph.D. degree are accepted, although in some cases an M.A. degree will be awarded upon satisfactory completion of the following requirements:

1. One year's residence as a full-time student.
2. Successful completion of a prescribed schedule of courses.
3. Passing the qualifying examination.
4. Demonstration of proficiency in either French *or* German.

Doctor of Philosophy

The degree requirements for the Ph.D. degree are as follows:

1. Residence as a full-time student for two years.
2. Successful completion of a prescribed schedule of courses.
3. Passing the qualifying examination with distinction.
4. Demonstration of proficiency in either French *or* German; and in any additional language needed for advanced work in the student's area of specialization.
5. Admission to candidacy.
6. Submission of a doctoral dissertation approved by the Department.
7. Successful defense of the dissertation.

Program of Study. Students will be assigned a tutor who will advise on the course of study and guide them in preparation for the qualifying examinations. First year students are required to take the pro-seminar in philosophy (Philosophy 200) and six additional semester courses, four of which must be within the Philosophy Department. Second-year students are required to take two semester courses from the 200 series and six additional semester courses. The student is also encouraged to take some work in a field other than philosophy that is related to his area of concentration. Such work may be taken in the first or second year and will count toward the fulfillment of the residence and course requirements for the Ph.D. It must have the prior approval of the student's adviser and the department chairman. A second-year student may not take more than two semester reading courses in the 300 series; these must also be approved by the adviser and the department chairman.

Qualifying Examination. The qualifying examination is given each September, and the student is required to take it at the end of the first full year of residence. A single comprehensive test will be set, divided historically into three periods: (1) up to A.D. 1500, (2) 1500-1870, (3) since 1870. In addition, there will be an examination on logic, based on Philosophy 115a and 130aR. Candidates are, however, expected to use the examination as an occasion for dealing with the questions raised in an analytical manner, and for developing ideas of their own, rather than for repeating factual information about the history of philosophy. Credit will accordingly be given for analytical power and for original ideas, as much as for a grasp of the historical points at issue.

For each historical period, set books will be named early in the academic year preceding the examination. Candidates are required to show general familiarity with the development of philosophy in each of the three periods. Three texts will be named for each period, covering a range of topics in (e.g.) metaphysics, epistemology, ethics and social philosophy. Specialized texts will occasionally be named, without prejudice to candidates concentrating in other areas of philosophy. All examinations must be passed with distinction within 30 months of initial enrollment in order to qualify for the Ph.D. degree. No examination may be taken more than twice.

Language Requirement. A proficient reading knowledge of either French or German is required. A student must take an examination in either language by the spring term of the first year in residence and must meet the language requirement no later than the beginning of the fifth term in residence. Language examinations will be given early in the fall and spring terms. The Department reserves the right to establish additional language requirements when necessary for a student's doctoral research.

A student whose further work requires the use of an additional language must first demonstrate proficiency in that language.

Admission to Candidacy. A student may be admitted to candidacy for the Ph.D. degree when he or she has completed the residence requirement, has passed with distinction all of the qualifying examinations, has fulfilled the language requirements and when the subject of the dissertation has been approved by the Department.

Dissertation Topic Oral Examination. To meet the final requirement for admission to candidacy, a student must have departmental approval of a thesis prospectus and must pass with distinction an oral examination in the general area of his or her proposed topic.

Dissertation and Defense. When a student has been admitted to candidacy, the department chairman will appoint a dissertation adviser and a dissertation committee. The dissertation will be written under the supervision of this committee and when it has been read and accepted by the committee a final oral examination will be scheduled wherein the candidate will defend the dissertation.

HISTORY OF IDEAS

Objectives

The program in the History of Ideas leads to the degree of Doctor of Philosophy in the History of Ideas. It is designed to give students a broad understanding of the historical development of ideas in several fields of thought, together with thorough training in the history of one of those fields. In practical terms, it prepares students, variously, for teaching and research in intellectual history and for historically-oriented teaching and research in philosophy and social science.

The program treats past thought systematically as well as historically, and is essentially interdisciplinary in character. The endeavor throughout is to examine the genesis of intellectual positions within a complex socio-historical matrix, the interrelation between theoretical and practical activities, and the role of ideas in human affairs.

A student trained in the program is expected to acquire a good general grasp of the theoretical and methodological problems involved in the comparative historical study of ideas, and of the general and intellectual history of a given period. The student is expected also to attain special competence in dealing, systematically as well as historically, with any one field of thought (philosophical, scientific, social) within the period of chronological concentration, and with the classic texts of that field as a whole. Finally, students are expected to acquire a competent knowledge of some branch of an external subject related to their special interests (for example, in philosophy: epistemology, philosophy of science, or social and political philosophy; in history: a period of national history or a category of comparative history; in sociology: political sociology, sociology of literature, or social psychology).

Admission

In addition to the general requirements for admission to the Graduate School specified in an earlier section of this catalog, applicants who propose to specialize in the History of Philosophical Thought should normally present an undergraduate major in philosophy, together with evidence of adequate preparation in history or one of the social sciences; applicants who propose to specialize in the History of Scientific Thought should normally present *either* an undergraduate major in a natural science, together with evidence of adequate previous experience in history and philosophy *or* an undergraduate major in history or philosophy, together with evidence of adequate previous experience in a natural science; applicants who propose to specialize in the History of Social Thought should normally present an undergraduate major in history, philosophy, or one of the social sciences. The Department requires that applicants submit a sample of written work with their application.

Degree Requirements

Master of Arts

In principle, only applicants for the Ph.D. program are accepted. There is no M.A. program as such. However, the M.A. degree will be awarded upon completion of the following requirements:

1. One year of residence as a full-time student.
2. Successful completion of a prescribed course of study.
3. Demonstration of proficiency in Latin, French or German.
4. Submission, by April 15, of an acceptable, substantial, scholarly paper written during the course of the year.

Doctor of Philosophy

The requirements for the Ph.D. degree are as follows:

1. Two years of residence as a full-time student.
2. Successful completion of a prescribed course of study.
3. Demonstration of proficiency in two of the following languages: Latin, French, German; and in any additional language needed for advanced work in the student's area of specialization.
4. Submission, by April 15 of the student's first year of residence, of an acceptable, substantial, scholarly paper written during the course of the year.
5. Passing the Qualifying Examinations with distinction.
6. Admission to candidacy.
7. Submission of a doctoral dissertation approved by the department.
8. Successful defense of the dissertation.

Program of Study. Each student will plan his or her program of study in consultation with the adviser.

Language Requirements. A proficient reading knowledge of two of the following languages is required: Latin, Greek, French, German, Italian, Spanish. A student whose further work requires the use of an additional language must first demonstrate proficiency in that language. Students are expected to pass the examination in at least one of the two required languages in their first year of residence, the other in the second year.

Qualifying Examinations. The Qualifying Examinations are to be taken toward the end of the second or at the beginning of the third year of graduate study, and in no case later than the end of the third year. The form of the examinations — written, oral, “take-home,” etc. — is decided by the student in consultation with his or her adviser. The examinations will cover:

1. The history of a field of thought within that period.
2. The general history of that field, with emphasis on the classics thereof.
3. The intellectual history of that period.
4. An external subject.

The requirements in the external subject may be and are usually met by completing with distinction two courses in that subject.

Admission to Candidacy. A student may be admitted to candidacy for the Ph.D. degree upon completion of the requirements as to residence, study, language proficiency, paper, qualifying examinations, and when the subject of the dissertation has been approved by the Department. Such approval depends, in part, upon the student’s passing with distinction an oral examination in the general area of his or her proposed topic.

Dissertation and Final Oral Examination. Once a student has been admitted to candidacy for the Ph.D. degree, the department chairman will appoint a dissertation adviser and a dissertation committee. The dissertation will be written under the supervision of the adviser. It will be read by the committee, and by such external readers as the committee may wish to consult. When the dissertation has been accepted, the candidate will defend it in a final oral examination.

Courses of Instruction

***PHILOSOPHY 103b. Seminar in Rationalism: Descartes**

PHILOSOPHY 105a. Plato

An introduction to Plato’s thought through an intensive reading of several major dialogues.

Mr. Hahn

PHILOSOPHY 105b. Aristotle

An introduction to Aristotle’s thought through an intensive reading of some selected treatises.

Mr. Hahn

***PHILOSOPHY 110b. Introduction to Marxism**

PHILOSOPHY 113b. Aesthetics

An examination of some of the fundamental issues in the Philosophy of the Arts.

Mr. Weitz

PHILOSOPHY 115aR. Intermediate Logic

Propositional calculus. Quantification theory. Satisfiability and validity.

Mr. Katz

PHILOSOPHY 116b. History of Modern Ethical Theory

A study of major moral philosophers in the modern period with special attention to Hume, Kant, Bentham, Mill and Bradley.

Mr. Aiken

PHILOSOPHY 117b. Topics in Ethical Theory

Can ethical principles be true or false? If so, are they true or false in the same way as scientific principles? How do we acquire knowledge of right or wrong? Answers to such questions will be sought in the works of classical, modern, and contemporary philosophers.

Mr. Wong

PHILOSOPHY 118a. Recent European Philosophy

Some main problems in phenomenology with special attention to the philosophy of Husserl.

Mr. Miller

PHILOSOPHY 119aR. Theory of Knowledge

An investigation into the conditions that make empirical knowledge possible. Special attention will be paid to the role of perception in knowledge. Both Anglo-American and Continental theories will be considered.

Mr. Miller

PHILOSOPHY 121bR. Foundations of Mathematics

Formal systems. Godel's theorems and consequences. Consistency proofs. Introduction to the theory of recursive functions. Hilbert's program and intuitionism.

Mr. Katz

***PHILOSOPHY 123b. Aristotle's Philosophy of Man**

***PHILOSOPHY 124b. Concepts: Their History and Variety**

PHILOSOPHY 130aR. Philosophy of Logic

An examination of the fundamental notions of logic. Signs and symbols. Sentences, statements and propositions. Negation, implication, deductibility, logical consequence. Theory of descriptions. The relation of formalized logic to ordinary language.

Mr. Sommers

***PHILOSOPHY 131a. History of Jewish Philosophy: From Antiquity to the Twelfth Century**

***PHILOSOPHY 131b. History of Jewish Philosophy: From the Twelfth to the Sixteenth Century**

***PHILOSOPHY 132a. Nineteenth Century Philosophy**

PHILOSOPHY 132b. Post-Kant Idealism

The development of Idealism following Kant's Transcendental Idealism: works of Fichte, Hegel, Schopenhauer and Nietzsche.

Ms. Hochsmann

PHILOSOPHY 133bR. Contemporary Analytic Philosophy

A critical survey of leading men and movements in recent British and American philosophy.

Mr. Weitz

***PHILOSOPHY 134a. Continental Existentialism**

PHILOSOPHY 139a. Human Rights

A philosophical analysis of major conceptions of human rights, past and present. Special attention will be given to recent problems concerning the social, religious and educational rights of disadvantaged peoples. These rights will be examined in both moral and legal contexts.

Mr. Swartz

PHILOSOPHY 140b. Philosophy of Science

An inquiry into the problems of description and explanation in the sciences. The status of laws and theories with particular emphasis on certain key issues in sociobiology and the issue of I.Q. in psychology.

Mr. Katz

***PHILOSOPHY 142a. Philosophy of Law**

PHILOSOPHY 144bR. Philosophy of Hume

A critical investigation of some main topics in Hume's *Treatise of Human Nature*.
To be announced

***PHILOSOPHY 145b. Hegel**

PHILOSOPHY 147aR. American Pragmatism

A study of major writings of the principal pragmatists including C.S. Peirce, William James, and John Dewey.

Mr. Aiken

PHILOSOPHY 150aR. Wittgenstein

An intensive study of the Philosophical Investigations.

Mr. Weitz

PHILOSOPHY 151aR. Social and Political Philosophy

How much freedom should individuals have? To what extent can freedom be reconciled with one's obligations to others? Answers to such questions will be sought in the works of socialists, contract theorists, and the ancient philosophers.

Mr. Wong

***PHILOSOPHY 153a. Introduction to Islamic Philosophy**

PHILOSOPHY 156b. Philosophy of Mind

An inquiry into the nature and functions of the mind. In particular, there will be discussion of Descartes' and Strawson's theories about the relation between mind and body. In addition, reductionist theories will be considered.

Ms. Hochsmann

PHILOSOPHY 158aR. Metaphysics

An analytical investigation of certain problems in the area of metaphysics. Reference will be made to traditional as well as contemporary philosophers. Discussion will focus on the role of experience in the resolution of problems.

Mr. Greenberg

***PHILOSOPHY 160b. Linguistic Philosophy**

PHILOSOPHY 167a. Kant

A contemporary analytic approach to certain problems in the *Critique of Pure Reason*.

Mr. Greenberg

***PHILOSOPHY 194b. Language and Mind**

***PHILOSOPHY 196a. Semantics**

PHILOSOPHY 300 — 306. Readings in Philosophy

300b.	<i>Mr. Aiken</i>	304a and b.	<i>Mr. Sommers</i>
303a and b.	<i>Mr. Greenberg</i>	306a and b.	<i>Mr. Weitz</i>

PHILOSOPHY 400 — 406. Dissertation Research

Independent Research for the Ph.D. degree.

400.	<i>Mr. Aiken</i>	404.	<i>Mr. Sommers</i>
403.	<i>Mr. Greenberg</i>	406.	<i>Mr. Weitz</i>

***HISTORY OF IDEAS 100b. Introduction to the History of Ideas**

HISTORY OF IDEAS 102a. Roman History

See Classics 102a.

Mr. Higgins

HISTORY OF IDEAS 102b. Topics in Roman History: Pagan and Christian Thought and Art in the Late Roman Empire

See Classics 102b.

Mr. Higgins

HISTORY OF IDEAS 103a. History of Science: Pre-Socratics to the Beginning of the Scientific Revolution of the 17th Century

This will be a general survey of the history of Western science starting with early Greek cosmology, mathematics, biology, etc. and culminating with the early 17th century achievements of, among others, Kepler, Galileo, and William Harvey. Throughout we will attempt to understand the development of Western science as much by examining "false" steps (e.g., astrology, magic) as by outlining the "true" steps in that development — as much by discussing "non-scientific" cultural factors as by tackling purely technical problems. This is a non-technical course, designed more for common than specially tutored sense.

Mr. Smith

HISTORY OF IDEAS 103b. History of Science: Scientific Revolution to the Early 19th Century

A survey of the development of classical mechanics, biology, astronomy, etc. from the mid-17th century to the early 19th century. We will deal with aspects of that development, including conservation theory, early "evolutionary" thought, electricity, and a number of others. Although some technical and philosophical issues will have to be taken up, the course will be slanted toward non-specialists.

Mr. Smith

HISTORY OF IDEAS 110b. Sociology of Knowledge

See Sociology 110b.

Mr. Wolff

***HISTORY OF IDEAS 123aR. Art and Culture in the Italian Renaissance**

HISTORY OF IDEAS 124a. Modern Jewish-Christian Thought

See NEJS 124a.

Messrs. Fox and Johnson

***HISTORY OF IDEAS 125b. Modern Religious Thought**

***HISTORY OF IDEAS 126a. Special Problems in the Philosophy of Religion**

***HISTORY OF IDEAS 126b. Religion and Its Conceptual Setting**

- *HISTORY OF IDEAS 130a.** Humanism in Europe
- *HISTORY OF IDEAS 136b.** Topics in Historical Jurisprudence: The English System of Law
- *HISTORY OF IDEAS 137aR.** Science in the Second Half of the Nineteenth Century.
- *HISTORY OF IDEAS 141a.** Intellectual History of Modern Europe
- *HISTORY OF IDEAS 141b.** Intellectual History of Modern Europe
- *HISTORY OF IDEAS 146a.** Intellectual History of Europe 1890-1930
- *HISTORY OF IDEAS 146b.** Intellectual History of Europe 1930-1970
- HISTORY OF IDEAS 163aR.** Communist Political Thought: Marx to Mao
See Politics 195aR. *Mr. Grow*
- HISTORY OF IDEAS 182b.** Political Thought from Machiavelli to Marx
See Politics 182b for description. *Mr. Hulliung*
- *HISTORY OF IDEAS 186a.** Modern Despotism: Theory and Practice
- HISTORY OF IDEAS 228a.** Themes in Sociological Theory
See Sociology 228a. *Mr. Wolff*
- HISTORY OF IDEAS 400 — 408.** Dissertation Research
Independent research for the Ph.D. degree.

400. <i>Mr. Aiken</i>	404. <i>Mr. Black</i>
402. <i>Mr. Berkowitz</i>	406. <i>Mr. Schweber</i>
403. <i>Mr. Binion</i>	408. <i>Mr. Johnson</i>

PHYSICS

Objectives

The graduate program in Physics is designed to equip students with a broad understanding of major fields of physics and to train them to carry out independent, original research. This objective is to be attained by formal course work and supervised research projects. As the number of students who are accepted is limited, a close contact between students and faculty is maintained, permitting close supervision and guidance of each student.

Advanced degrees will be granted upon evidence of the student's knowledge, understanding and proficiency in classical and modern physics. The satisfactory completion of advanced courses will constitute partial fulfillment of these requirements. Research upon which theses may be based, with residence at Brandeis, can be carried out in the following areas:

Theoretical Physics: Quantum theory of fields; elementary particle physics; general theory of relativity; quantum statistical mechanics; thermodynamics of irreversible processes; quantum theory of the solid state, critical phenomena and phase transitions.

Experimental Physics: High energy experimental physics; atomic and molecular physics; solid state physics; nuclear magnetic resonance; phase transition phenomena; liquid crystal physics; light scattering; positron physics; radio astronomy; biophysical structure analysis.

Admission

As a rule, only candidates for the Ph.D. degree will be accepted. The general requirements for admission to the Graduate School apply to candidates for admission to the graduate area in physics. Admission to advanced courses in physics will be granted following a conference with the student at entrance.

Faculty

Professor Eugene P. Gross, *Chairman:* Quantum theory of multiparticle systems. Quantum theory of solids. Kinetic theory. Plasma physics.

Associate Professor Max Chrétien, *Associate Chairman:* Computer science.

Professor Stephan Berko: Positron interactions in solids. Positronium physics.

Professor Donald L.D. Caspar (Rosenstiel Basic Medical Sciences Research Center): Structural molecular biology. X-ray crystallography.

Professor Stanley A. Deser: Quantum theory of fields. Elementary particles. Supergravity.

Professor David J. DeRosier (Rosenstiel Basic Medical Sciences Research Center): Structural molecular biology. X-ray crystallography.

Professor Jack S. Goldstein: Astrophysics.

Professor Marcus T. Grisaru: Quantum field theory. Elementary particles. Supergravity.

Professor Peter Heller: Solid state experimental physics. Phase transitions. Spin systems.

Professor Hugh N. Pendleton: Mathematical physics. Supergravity.

Professor Alfred G. Redfield (Rosenstiel Basic Medical Sciences Research Center): Magnetic resonance. Biophysics.

Professor Howard J. Schnitzer: Elementary particle theory. Quantum theory of fields.

Professor Silvan S. Schweber: Quantum theory of measurement. History of science.

Associate Professor Jacques Cohen: Computer science. Programming languages. Non-numerical algorithms.

Associate Professor Lawrence E. Kirsch, (Director, Feldberg Computer Center): High energy experimental physics.

Associate Professor Robert V. Lange: Biophysics. Visual perception.

Associate Professor Robert B. Meyer: Liquid crystal physics.

Associate Professor Lawrence M. Schwartz. Theoretical solid state physics. Electronic structure of disordered systems.

Associate Professor John F. C. Wardle: Radio astronomy. Cosmology.

Associate Professor Hermann F. Wellenstein: Experimental atomic physics. Electron impact spectroscopy.

Assistant Professor James R. Bensing: Experimental high energy physics.

Assistant Professor Karl F. Canter: Experimental low energy positron physics in atomic and many-body systems.

Assistant Professor Brian O. Clark: Experimental atomic physics.
Assistant Professor Pierre F. Maldague: Theoretical solid state physics.
Assistant Professor Richard A. Poster: Experimental elementary particle physics.
Assistant Professor Anthony G. Willis: Radio astronomy. Cosmology.
Assistant Professor Charles Y. Young: Experimental condensed matter physics.

Degree Requirements

Master of Arts

Program of Study. The requirements for advanced degrees in the Department of Physics are as follows:

1. One year's residence as a full-time student.
2. Six semester courses of advanced work in physics. A thesis on an approved topic may be accepted in place of a semester course.
3. Reading knowledge of Chinese, French, German, Italian, Japanese, Russian or Spanish; or proficiency in computer programming.
4. Satisfactory performance in the Qualifying Examination.

Doctor of Philosophy

1. Two years' residence as a full-time student.
2. Nine semester courses of advanced work in physics.
3. Reading knowledge of two of the languages listed under the Master of Arts requirements, including computer programming, with the restriction that at least one of them must be a "major" language (Chinese, French, German, Japanese or Russian).
4. Outstanding performance on the Qualifying Examination.
5. Passing of an Advanced Examination in topics related to the student's thesis subject. This examination will normally be taken after preparatory studies in the prospective field of research.
6. Doctoral thesis and final oral examination.

Program of Study and Course Requirements. Normally, first-year graduate students will elect courses from the 100 series; second-year students from the 200 series. To obtain credit toward residence for a graduate course taken at Brandeis, a student must achieve a final grade of "A" or "B" in that course. A student who obtains a grade lower than "B" or an "Incomplete" in two or more courses in any term will not be allowed to continue his or her studies beyond the end of that academic year. (A course from which a student withdraws after midterm will be considered as "Incomplete.")

Students may obtain credit for advanced courses taken at another institution provided their level corresponds to the level of the graduate courses at Brandeis and that an honor grade in these courses was obtained.

Residence Requirements. A student may obtain up to one year's residence credit toward the Ph.D. requirements for graduate studies taken at another institution. No transfer residence credit will be allowed toward fulfillment of the master's requirements.

Teaching. It is expected that all graduate students will do some undergraduate teaching during the course of their studies.

Language Examination. The Language Examination consists of a written translation of a scientific text into English. It is arranged informally between the student and the foreign language examiner. The requirements for the computer programming examination are a reasonably complete knowledge of FORTRAN, skill in programming, and familiarity with the most important methods of numerical analysis.

Qualifying Examination. In the first year Quantum Mechanics (Physics 102) and Electromagnetic Theory (Physics 101) must be taken by all students unless they are exempted. All students, whether exempted or not, must take the final examinations in these courses (both fall and spring semesters), which also serve as the qualifying examination although the course itself is not required. An oral examination on general physics, given at the end of the first year, completes the qualification requirements.

Specialized courses also will form part of the qualifying examination. At least two graduate courses, with final examinations in the specialized courses listed below, must be taken during the first three semesters: (1) Statistical Physics, (2) Solid State Physics, (3) Biophysics, (4) Elementary Particles, (5) Astrophysics, (6) Experimental Physics (Physics 109), (7) General Relativity. Note, however, that not all of the above courses will necessarily be given each year.

One semester of Advanced Quantum Mechanics (Physics 202a) will be a required course for all students.

Advanced Examinations. Advanced examinations will be in topics partitioned in the several areas of research interests of faculty. Faculty members working in each general area will function as a committee for this purpose and will provide information about their work through informal discussions and seminars. The advanced examination requirement consists of a written paper and an oral examination. While no original research by the student is expected, it is hoped that a proposal for a possible thesis topic will emerge. It is generally expected that the candidates will take the advanced examination in the field they wish to pursue for their Ph.D. theses, although there may be exceptions.

Thesis Research. After passing the advanced examination, the student begins work with an adviser who guides his or her research program. The adviser should be a member of the Brandeis faculty but in special circumstances may be a physicist associated with another research institution. The graduate committee of the physics faculty will appoint a dissertation committee to supervise the student's research. The student's dissertation adviser will be the chairman of the dissertation committee. The committee will recommend the student for admission to candidacy for the doctorate on recommendation of his or her adviser.

Dissertation and Final Oral Examination. The doctoral dissertation must represent a piece of research of a standard acceptable to the faculty committee appointed for each Ph.D. candidate. The final oral examination, or defense, is an examination in which the student will be asked questions pertaining to the dissertation research.

Courses of Instruction

***PHYSICS 100a. Advanced Classical Mechanics**

***PHYSICS 100b. Continuum Physics**

PHYSICS 101a. Electromagnetic Theory I

Electrostatics, magnetostatics, boundary value problems.

Mr. Schnitzer

PHYSICS 101b. Electromagnetic Theory II

Maxwell's equations. Quasi-stationary phenomena. Radiation.

Mr. Schnitzer

PHYSICS 102a. Quantum Mechanics I

The harmonic oscillator, the hydrogen atom and spin systems, as exemplars of various formulations of nonrelativistic quantum theory. Spherical harmonics and time-dependent perturbation theory. *Mr. Berko*

PHYSICS 102b. Quantum Mechanics II

Systems of identical particles. Coupling of angular momenta. Scattering theory. Time-dependent perturbation theory. Semi-classical analysis of interaction of atomic systems and electromagnetic waves. *Mr. Berko*

PHYSICS 103aR. Statistical Physics

Review of thermodynamics; statistical postulates; microcanonical, canonical, and grand canonical ensembles; thermodynamics of Fermi, Bose, and classical systems; theory of non-ideal gases; the fluctuation-dissipation theorem; correlation functions; mean field theories of cooperative phenomena. *Mr. Gross*

PHYSICS 104a. Solid State Physics I

The formal description of periodic systems. The vibrational and electronic properties of solids. Electron dynamics on the Fermi surface. The mean field theory of magnetic fields. *Mr. Meyer*

***PHYSICS 104b. Solid State Physics II**

PHYSICS 107b. Particle Physics

The phenomenology of elementary particles, strong and weak interactions. Topics include properties of particles, kinematics and quantum mechanics of scattering and decay of properties, phase space, quark model, unitary symmetries and conservation laws. *Mr. Bensinger*

***PHYSICS 108b. Introduction to Astrophysics**

PHYSICS 109a and b. Advanced Laboratory

Methods and techniques of experimental research. *Mr. Redfield*

***PHYSICS 110a. Mathematical Physics**

***PHYSICS 137a. Science in the Second Half of the Nineteenth Century**

***COMPUTER SCIENCE 151a. Theory of Recursive Functions**

PHYSICS 152b. Biological Assembly

Physical principles in the construction of biological structures: forces, equilibria, symmetry and control mechanisms. Analysis of the structure and assembly of viruses, membranes and cellular organelles. *Mr. Caspar*

***PHYSICS 200a. General Relativity I**

***PHYSICS 200b. General Relativity II**

***PHYSICS 201a. Advanced Many Body Physics**

***PHYSICS 201b. Physics of Many Particle Systems**

PHYSICS 202a. Advanced Quantum Mechanics

Formal theory of scattering. Many particle systems. Elements of second quantization. Relativistic quantum mechanics. Klein-Gordon and Dirac equations.

Mr. Deser

PHYSICS 202b. Relativistic Quantum Field Theory I

Second quantization. Quantum electrodynamics. Regularization and renormalization methods.

Mr. Pendleton

***PHYSICS 203a. Elementary Particle Physics I**

***PHYSICS 203b. Elementary Particle Physics II**

PHYSICS 204bR. Advanced Solid State Physics

The course will begin with a review of conventional solid state physics covering topics in lattice vibrations, band structure, magnetism and transport theory. Advanced topics in the physics of ordered and disordered solids will be discussed in terms of modern experimental and theoretical techniques.

Mr. Schwartz

***PHYSICS 207a. Plasma Physics**

PHYSICS 208a. Cosmology

A survey of modern cosmological ideas with particular emphasis on observational data. Major topics include: the Friedmann Big Bang models, physical processes in the early universe, galaxy formation, the 3°K Background Radiation, the present density of the universe, classical observational tests, the application of radio astronomy to cosmology.

Mr. Wardle

PHYSICS 209a and b. Laboratory Seminar I, II

Analysis of some important recent experiments.

Experimental Staff

PHYSICS 210a and b. Theoretical Seminar I, II

Analysis of important recent developments in theoretical physics.

Mr. Pendleton

PHYSICS 213a and b. Tutorial in Physics I, II

Staff

***PHYSICS 219aR. High Energy Astrophysics**

PHYSICS 240b. Seminar in Biophysical Research

See BIOPHYSICS 200b.

Mr. Caspar

***PHYSICS 250c. Chemical Physics Seminar**

PHYSICS 304a and b. Solid State Seminar I, II

Analysis and discussion of recent important developments in solid state physics.

Staff

***PHYSICS 311a. Advanced Topics in Mathematical Physics**

Research Courses

PHYSICS 405. Experimental Elementary Particle Physics

Mr. Poster

PHYSICS 406. Experimental Elementary Particle Physics

Mr. Chrétien

PHYSICS 407.	Experimental Elementary Particle Physics	<i>Mr. Kirsch</i>
PHYSICS 408.	Experimental Elementary Particle Physics	<i>Mr. Bensinger</i>
PHYSICS 409.	Theoretical Elementary Particle Physics	<i>Mr. Deser</i>
PHYSICS 410.	Theoretical Elementary Particle Physics	<i>Mr. Grisaru</i>
PHYSICS 411.	Theoretical Elementary Particle Physics	<i>Mr. Pendleton</i>
PHYSICS 412.	Theoretical Elementary Particle Physics	<i>Mr. Schnitzer</i>
PHYSICS 413.	Theoretical Elementary Particle Physics	<i>Mr. Schweber</i>
PHYSICS 414.	Experimental Solid State Physics	<i>Mr. Berko</i>
PHYSICS 415.	Experimental Solid State Physics	<i>Mr. Canter</i>
PHYSICS 416.	Experimental Solid State Physics	<i>Mr. Heller</i>
PHYSICS 417.	Theoretical Solid State Physics	<i>Mr. Maldague</i>
PHYSICS 418.	Theoretical Solid State Physics	<i>Mr. Gross</i>
PHYSICS 419.	Theoretical Solid State Physics	<i>Mr. Lange</i>
PHYSICS 420.	Theoretical Solid State Physics	<i>Mr. Schwartz</i>
PHYSICS 421.	Relativity	<i>Mr. Deser</i>
PHYSICS 422.	Mathematical Physics	<i>Mr. Grisaru</i>
PHYSICS 423.	Mathematical Physics	<i>Mr. Schweber</i>
PHYSICS 424.	Mathematical Physics	<i>Mr. Pendleton</i>
PHYSICS 425.	Statistical Physics	<i>Mr. Gross</i>
PHYSICS 426.	Astrophysics	<i>Mr. Goldstein</i>
PHYSICS 427.	Astrophysics	<i>Mr. Willis</i>
PHYSICS 428.	Astrophysics	<i>Mr. Wardle</i>
PHYSICS 429.	Structural Biology	<i>Mr. Caspar</i>
PHYSICS 430.	Structural Biology	<i>Mr. DeRosier</i>
PHYSICS 432.	Experimental Atomic and Molecular Physics	<i>Mr. Wellenstein</i>
PHYSICS 433.	Experimental Atomic Physics	<i>Mr. Clark</i>
PHYSICS 436.	Biophysics	<i>Mr. Redfield</i>
PHYSICS 437.	Experimental Condensed Matter Physics	<i>Mr. Meyer</i>
PHYSICS 438.	Experimental Condensed Matter Physics	<i>Mr. Young</i>

POLITICS

Objectives

The graduate program in Politics, leading to the degree of Doctor of Philosophy, emphasizes comprehensive professional training by stressing both the fundamentals of the discipline grounded in the study of political thought and institutions and the requirements of method and analytical skills.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. Normally, the student's undergraduate training must be in a field of social sciences to be considered for admission to this program. Applicants are expected to take the Graduate Record Examination.

Faculty

Professor Donald Hindley, *Chairman*: Comparative politics: South East Asia; Latin American politics.

Professor Marver H. Bernstein: American politics.

Professor Robert H. Binstock: American politics.

Professor Seyom Brown: International politics; American foreign policy.

Professor Samuel Krislov: Constitutional law and the judicial process.

Professor Roy C. Macridis: Comparative politics; Western Europe.

Professor Ruth S. Morgenthau: Comparative politics; Africa.

Professor I. Milton Sacks: Comparative politics; Labor politics.

Professor Peter Woll: American politics; Administrative law.

Associate Professor Robert J. Art: International relations; American foreign policy.

Associate Professor Mark L. Hulliung: Political theory.

Associate Professor Martin A. Levin, *Graduate Student Adviser*: American politics; Urban politics.

Visiting Associate Professor Dov Ronen: Comparative politics; International relations.

Assistant Professor Jeffrey Abramson: Political theory; Constitutional law.

Assistant Professor Elliot Feldman: Comparative politics; Public policy.

Assistant Professor Roy Grow: Comparative politics; China, Japan, Russia.

Assistant Professor Christopher Leman: American politics; Public policy.

Assistant Professor Susan M. Okin: Political theory.

Assistant Professor Ralph Thaxton: Comparative politics: Peasants and revolutions.

Degree Requirements

Master of Arts

No one will be accepted in the program who is not a doctoral candidate. However, the M.A. degree may be awarded upon satisfactory completion of one year of residence, the demonstration of proficiency in one foreign language, and the submission of an approved specimen of graduate-level scholarly writing to the Department. In certain cases the Department will counsel the student to complete his or her graduate studies program with a terminal M.A.

Doctor of Philosophy

Students should note certain special features of the program, in particular, (a) instruction in small seminars under close faculty supervision, (b) supervised independent study facilities within the Department, (c) supervised teaching assistantships, (d) opportunities for study in the consortium of universities in the Boston area, and (e) the opportunity to incorporate work in related and relevant fields, e.g. economics, anthropology, philosophy. Each student is assigned to a departmental adviser who will help plan a professional and pertinent program of study. A continuity of faculty direction is insured throughout the program, with allowance for shifts in curricular interest.

Program of Study. The student must complete two years in residence and a minimum of twelve half-courses. Students with an M.A. in political science from other institutions may petition at the end of one year to have their previous graduate courses accepted for Brandeis credit; this may relieve them of as much as a year of residence requirement. (However, they must satisfy all Brandeis requirements: distribution of curriculum, language, etc.) For distribution, each graduate student will be required to take three of the following fields: American Government, Comparative Government, International Relations, Political Theory and/or Methods, *or* two of the above plus a category of study at the graduate level in another department of the University, as shall be judged valid for the student's program by this Department. (See below for a further clarification of the fields of distribution.)

Within each of the three fields chosen, graduate students will be required to take at least *two* semester courses. The standard work load for full-time students is at least three courses in each semester of their first two years of study. Fourth courses and audits are encouraged, but the load is deliberately set so that the student may supplement his regular course work with independently motivated reading and scholarship. Reading courses will not be offered to first-semester students and will be generally discouraged during the first year. By the end of the first year, students should have identified their major and at least one of their minor fields of interest, and should make this known both to their adviser and the Graduate Studies Chairman. (In case of entering M.A.'s a complete program should be worked out by the end of the first semester.) At the end of the first year, an informal examination will be given to test the general progress of the student and suggest a future work plan. The examination will relate primarily to the courses taken by the student.

Normally, at the end of the fourth semester or early in the fifth, a formal oral and written examination for candidacy for the Ph.D. degree will be given covering the student's three fields but with emphasis on the sub-fields in which the student has done most of the work. Each examination is individual; it responds to the approved program of the student. The written examinations may be taken, upon arrangement, within any four-month period except summer holidays; the orals are, of course, simultaneous.

Language Requirements. By the end of the first year of study, the student must demonstrate proficiency in one approved foreign language. (Quantitative methods may be offered in lieu of one of the foreign languages but *not* for purposes of obtaining the M.A. degree.) Proficiency in a second language must be demonstrated prior to admission to Ph.D. candidacy. Language proficiency must be demonstrated at Brandeis and certified by the Department. Foreign language courses may not be counted for academic credit.

Admission to Candidacy. A student may be admitted to candidacy for the Ph.D. degree upon completing the residence requirement, and passing the qualifying examination, fulfilling the language requirement and obtaining departmental approval of the subject and preliminary precis of the dissertation.

Dissertation and Defense. The dissertation will be completed under the supervision of the appropriate member of the departmental faculty. It must be sponsored by a departmental committee of at least two members and have the approval of the graduate committee of the Department. It is assumed that the writing of the dissertation will take at least one year and, barring exceptional circumstances, not more than two and one-half years. The student must successfully defend the dissertation at a final oral examination conducted by his two departmental supervisors and another professor from outside the Department or from another university.

Teaching Assistantships. As determined by funds and undergraduate enrollments, the Department compensates students for teaching assistant work in an amount customarily based on need. First-year students do not normally receive teaching assistantships. It is the policy of the Department that teaching experience is a normal and necessary part of the graduate training program and that ideally all students should have this opportunity regardless of compensation.

Fields and Sub-Fields. As stated above, curricular distribution is based on four major fields. Within the broad range of American Government, special concentrations may be achieved in such areas as urban studies, public administration and policy, institutions of government, parties and pressure groups, constitutional law. The student specializing in Comparative Government should have a command of the important theories and theoretical techniques, and cluster of institutions or processes, such as development, political economy, or parties and bureaucracies, as well as familiarity with a designated geographical area. In International Politics, the student also needs a broad mastery of the principal theories, together with a specialization in such topics as international sub-systems, diplomatic history, security policy, comparative foreign policy, or American foreign policy, etc. In Theory and/or Methods, the student should be closely familiar with a major section of the history of political thought (ancient or modern) and the theories therein presented and developed, or may place primary emphasis on the so-called "scope and methods of modern political science." This latter category implies not just the knowledge of quantitative techniques but an ability to criticize their application and a general grasp of the intellectual climate in which the philosophy of social science has developed.

Since the field outside the Department is permitted for curricular distribution, it should be emphasized that no student will be allowed to concentrate exclusively in American studies.

The possibility of particular concentrations and emphases within the four major fields designated above will, of course, vary with the course offerings and the supervisory capacities of the departmental faculty.

Courses of Instruction

AMERICAN GOVERNMENT

***POLITICS 101aR. Parties, Pressure Groups and Public Opinion**

***POLITICS 104a. The American Voter**

POLITICS 107b. The Politics of Public Policy

This course will examine conflicts between environmentalism, economic growth, and other values in the following areas: air and water pollution, water development, land use regulation, energy, and the management of natural resources. We will assess how the U.S. system responds to different types of pressure (elections, public opinion, lobbying, litigation, citizen participation in administration, etc.). Perspectives will be drawn from history, economics, political sociology, and comparisons with other nations.

Mr. Leman

***POLITICS 109b. Federalism in the United States**

POLITICS 109bR. Federalism

American politics is characterized by conflict and cooperation among levels of government and among areas. National government is expanding, but state and local interests are represented by an "intergovernmental lobby" and within Congress. Topics covered in the course include grantsmanship, the sunbelt-snowbelt debate, and efforts to achieve regional coordination, consolidation and uniformity. Comparisons with Canadian federalism will be used. Student field work is encouraged.

Mr. Leman

***POLITICS 111a. The American Congress**

POLITICS 112a. Seminar: The Judicial Process

The course will include a survey of major approaches to the study of judicial process which have developed over the past decade or so, and a review of the findings with respect to behavior of participants in the judicial process. Major emphasis will be placed on points of interaction of different types of participants in the process. The policy output of each major component will be explored.

Mr. Krislov

POLITICS 113b. The American Presidency

This course focuses on the problem of Presidential leadership: relations with Congress, leadership within the executive branch, Presidential advising, Presidential character, the selection process, the "Imperial Presidency" and checks on the abuse of power. Units on the budget process and reorganization will be included. Case materials will be used to examine Presidents Wilson, Franklin Roosevelt, Eisenhower and subsequent presidents. Cross-national comparisons will be used where relevant.

Mr. Leman

***POLITICS 114a. The Legal Process: Law and Public Policy**

POLITICS 114aR. The Legal Process: Law and Public Policy

An examination of the methods of legal analysis, the processes through which the law develops, the limits of its competence, and a comparative examination of how differing societies attempt to make their legal process effective. Law as viewed as a technique for the resolution of public policy problems and a social process for affirming community values.

Mr. Krislov

POLITICS 115a. American Constitutional Law and Theory

An analysis of the core principles of constitutional law as formulated by the Supreme Court. Primary focus on the First Amendment, the Equal Protection and Due Process clauses, federalism, and separation of powers. The course will also emphasize the moral values and political theories which form our constitutional system.

Mr. Krislov

***POLITICS 115b. American Constitutional Law and Theory**

***POLITICS 116b. Civil Liberties in America**

***POLITICS 117a. Administrative Law**

POLITICS 118aR. Seminar: Policy Formation

A study of the aspects of policy making with reference to various organs of decision making in the Federal Government. *Mr. Woll*

POLITICS 119a. Seminar: Policymaking in Urban Areas

An examination of the development in urban areas of politics relating to poverty, class, race and the administration of justice. Special emphasis on the political conflict generated in the development and the relationship of political decision makers and social science "experts." *Mr. Levin*

***POLITICS 120aR. Politics of Urban Areas**

POLITICS 123b. The Politics of Urban Criminal Justice

Analysis of the behavior of police, prosecutors and trial court judges in urban areas. Special emphasis on the relationships between these officials and the political systems of the urban areas. Evaluation of these officials' behavior and especially its effect on their clients. *Mr. Levin*

POLITICS 124a. Labor and Politics in the United States

Emphasizing the historical approach, this course is an analytical treatment of the theories and practices of labor participation in American politics. *Mr. Sacks*

POLITICS 125a. Political Development in the Black Community I

See AAAS 125a for description.

Mr. Taylor

***POLITICS 125b. Political Development in the Black Community II**

COMPARATIVE POLITICS

POLITICS 127a. Government and Politics in Canada

An introduction to the institutional, social, and ideological characteristics of the Canadian federal system. Special attention will be given to the analysis of Quebec and contemporary political problems. *Mr. Feldman*

POLITICS 128aR. Contemporary Peasant Revolution

Introduction to revolutionary politics in peasant societies. The focus is on the role of peasants making revolutions in both traditional and modern political orders. Comparative attention to the nature of politics in traditional peasant societies, the recurring causes of peasant revolts, and the political factors which facilitate victorious rural revolutions. Emphasis is on explaining the origins, growth, and success of peasant revolutions. Specific focus on England, France, China, Japan, Vietnam, Mexico, Russia, Algeria, and Cuba. *Mr. Thaxton*

POLITICS 130b. Government and Politics of the Soviet Union

After a brief historical study of the 1917 revolutions, this course will analyze the ideological and institutional sources of Soviet state and party activity. Particular attention will be devoted to institutional development and its political, economic and social causes. *Mr. Sacks*

***POLITICS 140a. The Politics of Africa**

POLITICS 141aR. National and International Politics of Southern Africa

See AAAS 161aR for description.

Mr. Nyangoni

***POLITICS 141bR. Africa in World Politics**

POLITICS 144aR. Political Change in Latin America: I

This course focuses on the elements of stability and instability in the region. Specific examination is made of the Mexican and Cuban revolutions, the aborted Guatemalan revolution of 1944-54, and the "maverick" constitutional democracy of Costa Rica.

Mr. Hindley

***POLITICS 144bR. Political Change in Latin America: II**

POLITICS 147aR. Government and Politics of China

An introduction to the major themes of Chinese politics, emphasizing the rise of the Chinese Communists and the post-1949 trends in domestic politics, but also surveying historical, sociological, and cultural influences in Chinese politics. Attention will be given to the nature of the traditional state, impact of colonialism, national revolution, and the course of contemporary state development.

Mr. Thaxton

POLITICS 147b. Japan: Government and Politics

An examination of the history, development and current status of political institutions in Japan. Emphasis will be placed upon the relationship between political culture and government institutions.

Mr. Grow

POLITICS 150a. Government and Politics: Southeast Asia

An introduction to major aspects of the political development of Southeast Asia in the modern period: the impact of Western colonialism, the nationalist struggles, the post-independence attempts to establish viable political systems; communism; and intervention from outside the region.

Mr. Hindley

***POLITICS 152b. Government in India and Pakistan**

***POLITICS 153b. Modern Totalitarian Politics**

***POLITICS 155b. Seminar: Political Development and Modernization**

POLITICS 156b. European Political Systems

This course will compare modernization and its relationship to institutional and ideological development in Britain, France, Germany and Italy.

Mr. Feldman

***POLITICS 162a. Comparative Public Policy**

***POLITICS 164a. Comparative Foreign Policy**

***POLITICS 167b. Seminar on International Politics**

***POLITICS 168a. American Foreign Relations in the Twentieth Century**

INTERNATIONAL POLITICS

***POLITICS 164a. Comparative Foreign Policy**

POLITICS 168a. American Foreign Policy

See History 163a.

Mr. Schuker

POLITICS 168b. American Foreign Policy

A post World War II analysis of American foreign policy. The course will focus on three areas: how foreign policy decisions have been made; how they have been implemented; and what effects they have had.

Mr. Brown

***POLITICS 170aR. Imperialism**

***POLITICS 171b. Multinational Enterprises and National Power**

POLITICS 172b. Seminar: Theory Building in International Relations

The course will emphasize the problems of distinguishing constant from variable patterns in international relations, of distinguishing between mere correlation and essential causes of events, and of determining the possibilities for and causes in world politics.

Mr. Brown

POLITICS 174a. Problems of National Security

This course will examine the domestic and international sources of national security policy. The approach will be comparative and historical, and will use contemporary issues from the United States, the Soviet Union and other countries as examples. Topics will include the relationship of military capabilities to national power, technology as a factor in peace and war, the domestic sources of power, the impact of nuclear weapons on world politics, and the contribution of arms control and disarmament strategies on international security.

Mr. Brown

POLITICS 175a. International Relations in the Middle East

The course focuses on the Arab-Israeli conflict in the international context. At first we will get acquainted with the states and people of the Middle East; secondly, with the issues pertaining to the conflict; and thirdly, with the attitudes, activities, and proposed solutions of the major powers and the participants.

Mr. Ronen

***POLITICS 176b. International Organizations**

POLITICS 177bR. China and the Soviet Union in World Affairs

An investigation of the role of the Soviet Union and China in the international system. Topics will include Sino-Soviet relations, communist bloc activity, and the relationship of China and the Soviet Union to specific areas of the world such as East Europe, the Middle East and the United States. In the second half of the course, class members will participate in a game-situation problem.

Mr. Grow

POLITICS 178b. International Politics in the Pacific Area

Analysis of the forces underlying international relations in the Pacific areas in the twentieth century. Topics include: Soviet-Asian policies; the strategic position of the emergent Southeast Asian states; Sino-Japanese conflict; America's stake in Asia; Communist China's foreign policy; prospect for peace in the Pacific.

Mr. Sacks

POLITICAL THEORY AND METHODS

***POLITICS 182a. Political Thought from Plato to Machiavelli**

POLITICS 182b. Political Thought from Machiavelli to Marx

The first segment of the course will examine struggles between proponents and opponents of the old regime, with special emphasis on the germination of radical thought in pre-revolutionary Europe. The second segment will deal with intellectual responses to the French Revolution.

Mr. Hulliung

POLITICS 185a. Public Policy and Political Theory

This course relates eighteenth century western political theory to contemporary public policy problems. Concentrating on coercion in the liberal democratic state, the course will consider taxation, compulsory education, civil rights and military conscription.

Mr. Feldman

***POLITICS 190aR. Democratic Political Thought**

***POLITICS 192b. Psychology of Political Theory**

***POLITICS 193a. Theories of Political Sociology**

***POLITICS 194a. Empirical Political Theory**

POLITICS 195aR. Communist Political Thought — Marx to Mao

An introduction to the political and economic themes in communist literature, concentrating on the works of Marx, Engels, Lenin, Trotsky, Stalin and Mao Tse-tung. The course will investigate in both topical and historical manner basic theories of state, economic organization, social conflict, political activity and revolution in their writings.

Mr. Grow

***POLITICS 196b. Contemporary Political Theory**

POLITICS 198bR. Women in the History of Political Thought

A study of the ideological roots of sexism in Western culture. By critically assessing the arguments about women of some of the major political philosophers, in the context of their ideas as a whole, we will attempt to assess the validity of discrimination according to sex. The course will conclude with the examination of some recent constitutional law cases pertaining to women and sex discrimination.

Ms. Okin

SPECIALIZED SEMINARS FOR GRADUATE STUDENTS

The following 200-level courses will be offered as seminars for graduate students in conjunction with corresponding 90- and 100-level courses. The graduate students will take the 100-level course; they will be expected to do additional work and may meet in extra sessions. (See appropriate 100-level courses for description; e.g., Politics 112a for Politics 212a description.)

POLITICS 212a. Seminar: The Judicial Process

Mr. Krislov

POLITICS 218aR. Policy Formation

Mr. Woll

POLITICS 219a. Seminar: Policymaking in Urban Areas

Mr. Levin

POLITICS 272b. Seminar: Theory Building in International Relations *Mr. Brown*

POLITICS 294b. Seminar in Public Policy

See Politics 97b.

Mr. Feldman

POLITICS 297a/Section I. Trotsky and Trotskyism

See Politics 97a.

Mr. Grow

POLITICS 297a/Section II. Mediterranean Politics

See Politics 97a/Section II.

Mr. Macridis

POLITICS 297b/Section I. The Limits of the Market and Public Intervention

See Politics 97b.

Mr. Levin

POLITICS 297b/Section II. Marx: Social and Political Theory

See Politics 97b.

Ms. Okin

POLITICS 297b/Section III. Government and Politics of Canada

See Politics 97b/Section III.

Mr. Feldman

POLITICS 301 — 317. Readings in Politics

301a and b.	<i>Mr. Binstock</i>	310b.	<i>Mr. Hulliung</i>
302a and b.	<i>Mr. Brown</i>	311a and b.	<i>Mr. Levin</i>
303a and b.	<i>Mr. Hindley</i>	*312a and b.	<i>Mr. Abramson</i>
304a and b.	<i>Mr. Krislov</i>	313a and b.	<i>Mr. Feldman</i>
305a.	<i>Mr. Macridis</i>	314a and b.	<i>Mr. Grow</i>
*306a and b.	<i>Ms. Morgenthau</i>	315a and b.	<i>Mr. Leman</i>
307a and b.	<i>Mr. Sacks</i>	316a and b.	<i>Ms. Okin</i>
308b.	<i>Mr. Woll</i>	317b.	<i>Mr. Thaxton</i>
309a and b.	<i>Mr. Art</i>		

POLITICS 401 — 417. Dissertation Research

Independent research for the Ph.D. degree.

401.	<i>Mr. Binstock</i>	410.	<i>Mr. Hulliung</i>
402.	<i>Mr. Brown</i>	411.	<i>Mr. Levin</i>
403.	<i>Mr. Hindley</i>	412.	<i>Mr. Abramson</i>
404.	<i>Mr. Krislov</i>	413.	<i>Mr. Feldman</i>
405.	<i>Mr. Macridis</i>	414.	<i>Mr. Grow</i>
406.	<i>Ms. Morgenthau</i>	415.	<i>Mr. Leman</i>
407.	<i>Mr. Sacks</i>	416.	<i>Ms. Okin</i>
408.	<i>Mr. Woll</i>	417.	<i>Mr. Thaxton</i>
409.	<i>Mr. Art</i>		

PSYCHOLOGY

Objectives

The graduate program in Psychology leads to the degree of Doctor of Philosophy. The goal of the program is to develop competent research psychologists and teachers who will become contributors to knowledge in psychology. Toward this end, an emphasis is placed on research activity, starting in the first semester of graduate study. The program of study reflects a belief that the student should develop an area of research specialization and also should be exposed to a range of topics in general psychology. Dissertation supervision is available in the following areas: Sensation, Perception, Memory, Learning, Thinking, Comparative, Child, Personality, Psychopathology, and Social Psychology.

Admission

The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to this area of study.

An undergraduate major in psychology is not required. Students with inadequate preparation may make up their deficiencies during their first year, but without residence credit. Students are admitted on a competitive basis which includes evaluation of previous academic record, recommendations, results of the Graduate Record Examinations (Aptitudes and Psychology Achievement Tests), and the Miller Analogies Test.

Faculty

Associate Professor James R. Lackner, *Chairman*: Human experimental psychology. Psycholinguistics.

Professor Ricardo B. Morant, *Director of Graduate Studies*: Experimental psychology. Perceptual mechanisms. Sensation and perception.

Professor Zick Rubin: Social psychology. Interpersonal relationships.

Associate Professor Maurice Hershenson: Perception. Developmental theory.

Visiting Associate Professor David J. Ingle: Physiological psychology.

Associate Professor Leslie A. McArthur: Social psychology. Interpersonal attraction.

Associate Professor Arthur Wingfield: Human memory. Cognitive processes. Experimental psychology.

Associate Professor Jerome Wodinsky: Comparative psychology. Learning theory. Sensory physiology.

Assistant Professor Teresa M. Amabile: Social psychology. Creativity.

Assistant Professor Lawrence E. Arend, Jr.: Psychophysiology of human vision.

Assistant Professor H. William DeJong: Social psychology. Altruism. Stigma.

Assistant Professor Susan Goldberg: Developmental psychology.

Assistant Professor Donald N. Kaiser: Clinical psychology.

Assistant Professor Raymond Knight: Clinical psychology. Experimental psychopathology.

Assistant Professor Malcolm W. Watson: Developmental psychology.

Degree Requirements

Doctor of Philosophy

Program of Study. Although there is a two-year minimum residency requirement, four years of full-time graduate study are usually required for the Ph.D. The student is expected to carry the equivalent of twelve credit units per semester during residency.

Research. Each student will devote one-quarter of his or her time to research the first semester of the entering year. For all subsequent semesters, students shall devote a minimum of one-half time to research.

Research Reports. Students will submit reports on their research for the preceding year, in journal form, in time to permit evaluation of the first project by the end of the third semester, and of the second project by the end of the fifth semester. In the event that a student's first-year research report is unsatisfactory, the student will be required to take a terminal master's degree completed not later than the end of the fourth semester of residence. Students who have satisfactorily completed the research requirement will be permitted to continue their work toward the doctorate with no formal requirement of a master's degree.

Course Requirements. Entering students shall take *two seminars* and Psychology 210a in the first semester of residence, one seminar and Psychology 210b in the second semester. After that they shall take two seminars per semester in the second year, and one seminar each semester thereafter. Course selection will not be restricted to the Psychology Department, but will be arranged by the student in consultation with the faculty adviser. Two of the courses that the student takes during his or her graduate training must be outside of the area of specialization.

Qualifying Examinations. In the early part of the fifth semester of residence, each student will be thoroughly examined in the historical, theoretical and empirical literature related to the student's area of specialization, broadly conceived. The chairman of the Department will appoint a three-member committee to administer the qualifying examination from a list provided by the student's dissertation adviser. In the event that the student fails his or her qualifying examination, he or she will be awarded a terminal master's degree on the basis of an adequate second-year research paper. A student may petition the Department to take the examination a second time if necessary.

Breadth Requirement. All graduate students must demonstrate breadth in the field of psychology before being admitted to candidacy for the Ph.D. This breadth requirement may be fulfilled by demonstrating competence in at least five of the seven areas listed below. The requirements may be satisfied in any of three ways:

- a. By having completed an undergraduate course in that area,
- b. By completing an undergraduate course offered in that area at Brandeis,
- c. By successfully passing the equivalent of an undergraduate final examination for that course.
 1. History and Systems
 2. Physiological
 3. Perception
 4. Learning
 5. Abnormal
 6. Social
 7. Developmental

The other breadth requirement of two *graduate* courses outside of the student's area remains unchanged.

Language Requirement. Reading proficiency in at least one foreign language is required. This language must be one in which substantial psychological literature ex-

ists. Language examinations are offered by the Department four times a year, usually in September, December, February and May. Students are expected to satisfy the language requirement as soon as possible. By regulation of the Graduate School, a student who has not passed an examination in at least one foreign language by the end of the first year of study will not be eligible for financial aid from the University for the second year.

Admission to Candidacy. A student may be admitted to candidacy for the doctorate upon fulfilling the above requirements.

Dissertation and Defense. Following the completion of all examinations, the student will prepare a prospectus of the proposed dissertation study in consultation with a faculty dissertation sponsor. The prospectus may be based on preliminary research conducted prior to the student's admission to candidacy for the doctorate. Upon approval by the faculty of the Department, a dissertation committee of three or more members will be appointed by the Department chairman, including the dissertation sponsor as chairman of the committee. The dissertation sponsor will be responsible for advising the student throughout the performance of his or her work, in consultation with the remaining members of the committee at appropriate times in the course of the work. From time to time, the committee will report the student's progress to the Department faculty.

The dissertation should provide evidence of originality, scholarship and research ability. It should be a contribution to knowledge, ordinarily an experimental investigation, but not necessarily so. Upon submission to the chairman of the department of a copy of the thesis, signed by all three members of the thesis committee, and a successful defense of the thesis before all members of the Department, the award of the Ph.D. will be recommended to the Faculty Council of the Graduate School.

Courses of Instruction

PSYCHOLOGY 102b. Physiological Psychology

Those aspects of physiology most relevant to psychological investigation: the anatomy and physiology of receptor and effector organs, the neuron and synapse, sensory and motor neural pathways, the integrative activity of the central nervous system, the autonomic nervous system and the action of hormonal factors.

Formerly PSYCH 118b. May not be repeated for credit.

Mr. Ingle

PSYCHOLOGY 103a. Cognitive Processes

Cognitive factors in perception, attention, memory and language. Experimental investigations will be emphasized.

Prerequisites: PSYCH 5 and 10, or PSYCH 12.

Enrollment limited to 15 students.

Formerly PSYCH 143a. May not be repeated for credit.

Mr. Wingfield

PSYCHOLOGY 104a. Learning and Behavior

The concept of learning will be examined critically on the basis of infra-human and human studies. Techniques for generating and maintaining learned behavior will receive detailed attention, with emphasis on their relevance to mental retardation, mental illness, delinquency, and education.

Prerequisite: PSYCH 5.

Formerly PSYCH 140a. May not be repeated for credit.

Mr. Wodinsky

***PSYCHOLOGY 108a. Sensory Processes**

***PSYCHOLOGY 109b. Seminar in Perception**

***PSYCHOLOGY 113a. Personality**

PSYCHOLOGY 114a. Abnormal Psychology

A general introduction to psychopathology. Various theoretical models will be discussed. The techniques and findings of research, both clinical and experimental, will be emphasized.

Formerly PSYCH 134a. May not be repeated for credit.

Mr. Knight

PSYCHOLOGY 115a. Child Development

An examination of developmental issues from infancy to middle childhood. Study of perceptual, cognitive, affective and social development.

Formerly PSYCH 15a. May not be repeated for credit.

Ms. Goldberg

PSYCHOLOGY 115aR. Child Development

An examination of normal child development from conception through adolescence. Emphasis will be given to theoretical issues and processes of development in the cognitive and social domains.

Formerly PSYCH 15aR. May not be repeated for credit.

Mr. Watson

PSYCHOLOGY 117bR. Social Psychology

An introduction to research and theory on social behavior. Topics include social perception, socialization, social interaction and relationships, attitude change and social influence, and behavior in groups and organizations.

Mr. Rubin

PSYCHOLOGY 117b. Social Psychology

See PSYCH 117bR for description.

Ms. Amabile

PSYCHOLOGY 119aR. Comparative Psychology

The analysis of the behavior of organisms from a comparative and evolutionary perspective, considering genetic, humoral, sensory, and experimental factors in the control behavior.

Mr. Wodinsky

PSYCHOLOGY 131b. Social Development

Study of social development from infancy to middle childhood. Topics will include theories of social development, parent-child and peer relations, sex-role socialization and moral development. Emphasis will be on learning to read and to interpret the research literature.

Ms. Goldberg

PSYCHOLOGY 133a. Altruism and Prosocial Behavior

Major theoretical and experimental approaches to the study of altruistic behavior are considered. Influences on altruistic behavior to be covered include empathy and physiological arousal, self-image, models, and social norms. Focus of the course will be completion of a research project. Preference in enrollment will be given to students who have had either PSYCH 10 or PSYCH 190.

Mr. DeJong

PSYCHOLOGY 138aR. Seminar: Conceptions of Social Relationships

An examination of social relationships, including parent-child relationships, work relationships, friendship, and marriage, viewed in the context of psychological development, social structure, and culture. Attention will be given to the research strategies used by psychologists, sociologists, anthropologists, and others in their studies of social relationships.

Mr. Rubin

PSYCHOLOGY 154aR. Human Memory

A detailed examination of traditional and contemporary views on the nature and processes involved in short and long-term memory and attention. Experimental investigations will be emphasized.

Formerly PSYCH 124a. May not be repeated for credit.

Mr. Wingfield

PSYCHOLOGY 155a. Visual Space Perception

The problems underlying the perception of space will be discussed within the context of theory. Classical and modern approaches will be covered. Size constancy, shape constancy and stereopsis will be covered in detail.

Enrollment limited to twenty students.

Mr. Hershenson

PSYCHOLOGY 161c. Mental Health in the United States: Supervised Field Work

Students pursue a program of reading and spend one day a week working or observing in some clinical installation; there are weekly class meetings.

Prerequisite: Permission of instructor. Psychology 113 or 114.

Mr. Knight

PSYCHOLOGY 162a. Psychosomatics

The interrelationships of psychological, social and cultural factors in physical disease. Topics include psychophysiological mechanisms in disease, physiological correlates of mental disease, and "somato-psychic problems."

Formerly PSYCH 142a. May not be repeated for credit.

Prerequisite: Permission of instructor.

Mr. Kaiser

PSYCHOLOGY 166b. Psychopathology and Cognition

Alterations of perceptual and conceptual processes in brain-injured and schizophrenic patients.

Formerly PSYCH 146b. May not be repeated for credit.

Mr. Kaiser

PSYCHOLOGY 167b. Schools of Psychotherapy

The theories and techniques of several schools of psychotherapy and behavior modification are considered. The theories of personality, methods of intervention, goals of therapy, and relevant research will be emphasized.

Prerequisite: Psychology 113a or 114a.

Mr. Knight

PSYCHOLOGY 171a. Biological Bases of Motivation

Topics to be treated include hunger, thirst, migration, sexual behavior. Evidence from biology, neurophysiology, and endocrinology will be evaluated.

Mr. Wodinsky

PSYCHOLOGY 195a. Introduction to Psychological Theory

A survey of psychological theories including Associationism, Structuralism, Functionalism, Gestalt, Behaviorism, Psychoanalysis, and their modern derivatives. Emphasis is on the nature of explanation and the methods by which it is achieved.

Formerly PSYCH 150a. May not be repeated for credit.

Enrollment limited to 20 students.

Mr. Hershenson

PSYCHOLOGY 197a. Language Acquisition

See ENGLISH 197a.

Ms. Grimshaw

PSYCHOLOGY 200a and b. Observation and Research Strategies in Psychology

Staff

***PSYCHOLOGY 201b. Seminar in Abnormal Psychology**

***PSYCHOLOGY 202b. Seminar in Attribution Theory**

PSYCHOLOGY 203b. Seminar in Sensation and Perception

The course will cover a graduate-level treatment of advanced topics of current theoretical interest in various sensory systems and the implications of this for explaining perceptual phenomena. *Mr. Arend*

PSYCHOLOGY 204a. Research Methodology for Developmental and Social Psychology

A study of the design, methods, and techniques that are especially appropriate for investigating developmental and social psychology problems. Emphasis will be given to the issues and aspects required for adequate research. A research practicum will be required.

Enrollment limited to 20 students.

Mr. Watson

PSYCHOLOGY 207aR. Seminar in Perception

A survey of information processing, approaches to perception, perceptual memory and recognition.

Prerequisite: PSYCH 109, 155, 156 or equivalent.

Enrollment limited to 15 students.

Mr. Hershenson

***PSYCHOLOGY 208b. Seminar in Thinking and Problem Solving**

***PSYCHOLOGY 209b. Writing Seminar**

PSYCHOLOGY 210a. Advanced Psychological Statistics

Probability and inferential statistics for experimental research. Probability, random variables, some important probability distributions, statistical inference, large- and small-sample tests of hypotheses concerning population means and variances. *Mr. Arend*

PSYCHOLOGY 210b. Advanced Psychological Statistics

Topics to be covered will include: correlation and regression, introduction to matrix algebra, multiple regression, partial and multiple correlation, principles of experimental design, and analysis of variance.

Prerequisite: Psychology 210a or permission of the instructor. *To be announced*

***PSYCHOLOGY 211a. Seminar in Developmental Psychology: Early Social Relations**

PSYCHOLOGY 212a. Concepts and Methods of Psychophysiology

A study of the fundamentals of psychophysiological research. Emphasis will be given to the relationships between physiological variables and the areas of cognition, affect and stress. Theoretical issues concerning relations between physiological and behavioral variables, autonomic nervous system physiology, design of psychophysiological experiments, recording devices and methods, and problems of data analysis and interpretation will also be discussed. *Mr. Kaiser*

PSYCHOLOGY 213b. The Psychology of Pictorial Representation

The main thrust of the seminar will be to explore the question of how visual reality is mediated by painting. The first meetings will examine the theories of, among others, Gombrich, Gibson and Arnheim. Later meetings will deal with specific issues relating to the representation of objects and persons; for example,

anamorphic art and the problem of perspective, the representation of color and brightness relationships, object transparency, caricature and image, pictures as signals and symbols.

Permission of instructor required.

Mr. Morant

***PSYCHOLOGY 214a. History of Psychological Thought**

***PSYCHOLOGY 215a. Psychological Scaling Methods and Theory**

***PSYCHOLOGY 216a. History of Social Psychology**

***PSYCHOLOGY 217b. Research Seminar in Clinical Psychology**

***PSYCHOLOGY 218a. Seminar in Social Psychology**

***PSYCHOLOGY 219b. Physiological Psychology**

PSYCHOLOGY 220-234. Courses in Research

220a and b. Research in Social Psychology *Ms. Amabile*

221a and b. Research in Visual Psychophysics *Mr. Arend*

222a and b. Research in Social Psychology: Altruism and Stigma *Mr. DeJong*

223a and b. Research in Early Development *Ms. Goldberg*

224a and b. Research in Visual Information Processing *Mr. Hershenson*

225a and b. Research in Neural Mechanisms of Vision

Research will be concerned with neuromechanisms of animal vision, using both the oblation method and that of single-unit recording. *Mr. Ingle*

226a and b. Research in Human Psychophysiology *Mr. Kaiser*

227a and b. Research in Cognitive Processes in Psychopathology *Mr. Knight*

228a and b. Research in Human Spatial Orientation *Mr. Lackner*

229a and b. Research in Person Perception *Ms. McArthur*

230a and b. Research in Human Spatial Orientation *Mr. Morant*

231a and b. Research in Social Psychology *Mr. Rubin*

232a and b. Research in Developmental Psychology *Mr. Watson*

233a and b. Research in Speech Perception and Cognitive Processes

Mr. Wingfield

234a and b. Research in Animal Behavior

Mr. Wodinsky

PSYCHOLOGY 250-264. Advanced Research Project

250a and b. *Ms. Amabile*

258a and b. *Mr. Lackner*

251a and b. *Mr. Arend*

259a and b. *Ms. McArthur*

252a and b. *Mr. DeJong*

260a and b. *Mr. Morant*

253a and b. *Ms. Goldberg*

261a and b. *Mr. Rubin*

254a and b. *Mr. Hershenson*

262a and b. *Mr. Watson*

255a and b. *Mr. Ingle*

263a and b. *Mr. Wingfield*

256a and b. *Mr. Kaiser*

264a and b. *Mr. Wodinsky*

257a and b. *Mr. Knight*

PSYCHOLOGY 280-294. Advanced Readings

280a and b. *Ms. Amabile*

288a and b. *Mr. Lackner*

281a and b. *Mr. Arend*

289a and b. *Ms. McArthur*

282a and b. *Mr. DeJong*

290a and b. *Mr. Morant*

283a and b. *Ms. Goldberg*

291a and b. *Mr. Rubin*

284a and b. *Mr. Hershenson*

292a and b. *Mr. Watson*

285a and b. *Mr. Ingle*

293a and b. *Mr. Wingfield*

286a and b. *Mr. Kaiser*

294a and b. *Mr. Wodinsky*

287a and b. *Mr. Knight*

PSYCHOLOGY 300. Issues in Social Psychology

Fall Term: An overview of the history of social psychology, combined with a survey of work on social perception, self perception, and social cognition. Special emphasis will be given to attribution theory and naive psychology.

Spring Term: Theory and research on social behavior. The focus will be on dyadic interaction and relationships, viewed in the context of psychological development, social structure, and culture.

Enrollment limited to 20 students. Permission of instructors required.

This course must be taken in conjunction with PSYCH 301.

Ms. Amabile, Fall Term

Mr. Rubin, Spring Term

PSYCHOLOGY 301. Issues in Developmental Psychology

An overview of the history of developmental psychology followed by a survey of major topics and issues in contemporary theory and research. Emphasis will be given to integrating concepts and findings in developmental and social psychology. Social and cognitive development will be stressed.

Enrollment limited to 20 students. Permission of instructors required.

Mr. Watson, Fall Term

Ms. Goldberg, Spring Term

PSYCHOLOGY 400-414. Dissertation Research

400. *Ms. Amabile*

408. *Mr. Lackner*

401. *Mr. Arend*

409. *Ms. McArthur*

402. *Mr. DeJong*

410. *Mr. Morant*

403. *Ms. Goldberg*

411. *Mr. Rubin*

404. *Mr. Hershenson*

412. *Mr. Watson*

405. *Mr. Ingle*

413. *Mr. Wingfield*

406. *Mr. Kaiser*

414. *Mr. Wodinsky*

407. *Mr. Knight*

RUSSIAN

See Joint Program of Literary Studies (page 94).

SOCIOLOGY

Objectives

The graduate program in Sociology is primarily a doctoral program and is designed for students who intend to devote themselves to teaching and research in sociology. The student may, by satisfying certain requirements, receive the M.A. degree. The general objective is to educate students in the major areas of sociology with specialization in several of them.

Admission

The general requirements for admission to the Graduate School, as specified in an earlier section of this catalog, apply to candidates for admission to the Sociology Department.

In addition, all prospective students are encouraged to submit written material (papers, etc.) representative of their best work, which need not be, however, of a sociological nature.

Faculty

Professor Egon Bittner, *Chairman*: Sociology of law. Social controls.

Professor Emeritus Everett C. Hughes: Race and ethnic relations. Occupations and work systems.

Visiting Professor Ralph Miliband: Comparative social structures. Political sociology.

Professor Morris S. Schwartz: Social psychology. Social psychiatry.

Professor Maurice R. Stein: Communities. Sociology of culture.

Professor Kurt H. Wolff: Sociological theory. Sociology of knowledge, phenomenology and sociology.

Professor Irving K. Zola: Deviance. Sociology of health and illness.

Associate Professor Gordon A. Fellman: Social psychology. Stratification.

Associate Professor Charles S. Fisher: Social movements. Ethnography and collective behavior.

Associate Professor George W. Ross: Political sociology. Social theory.

Assistant Professor Charles Derber: Social and political psychology. Social class and social change.

Assistant Professor Karen E. Fields: Sociology of religion. Sociology of development.

Assistant Professor Gila J. Hayim: Social and psychological theory. Social control. Criminology.

Assistant Professor Paula Rayman: Rural-urban community organization. Social change theory.

Assistant Professor Kristine M. Rosenthal: Developmental psychology and education. Sociology of the family.

Assistant Professor Charlotte Weissberg: Social and psychological theory. Sociology of education.

Degree Requirements

Doctor of Philosophy

Program of Study. Students entering the Ph.D. program in Sociology are expected to undertake a two-year program of course work, as a part of which they are obliged to take the departmental Pro-Seminar (Sociology 290). The initial program of studies will be arranged in consultation with the graduate student's adviser. Consideration will be given to graduate work done elsewhere but formal transfer credit will be assigned only after the successful completion of the first year of study.

Requirements for the M.A. An M.A. may be granted after the successful completion of eight courses, passing one foreign language examination, and submission of two substantial research papers to be approved by the Department.

Residence Requirements. The minimum residence requirement for the degree of Doctor of Philosophy is two years. It is expected that the Ph.D. will be earned within five years.

Language Requirements. Candidates for the Ph.D. degree must demonstrate either proficiency in two foreign languages or knowledge of one language in depth. At least one of the languages must be chosen from French, German, Italian, Spanish, or Russian. The choice of the second language is subject to approval by the Department. Students may petition to substitute quantitative methods for the second foreign language.

Qualifying Examinations. During a student's residency until the time of his or her formal admission to candidacy, the specific planning, evaluations and accreditation of his or her entire course of study will be in the hands of each student's Guidance-Accreditation Committee composed of three faculty members. Along with the student, this committee will lay out a general course of study designed to meet the interests and needs of the student. Upon completion of this course of study and research, the student will take an oral qualifying examination covering both general sociology and the areas of the student's special interests. It is assumed that students will fulfill their accreditation before the end of their third year of residence.

Admission to Candidacy. A student shall be eligible for admission to candidacy for the Ph.D. upon fulfillment of the residence requirements, the foreign language requirement, passing the departmental qualifying examination, and submission of an acceptable dissertation proposal. The work on the doctoral dissertation will be supervised by a Dissertation Committee.

Dissertation and Final Oral Examination. The Ph.D. dissertation may be accepted by the Department upon the recommendation of the Dissertation Committee. To be granted the degree, the student is required to defend the dissertation in a public Final Oral Examination.

Courses of Instruction

SOCIOLOGY 102a. Social Psychiatry

Training in peer counseling is offered through classes, supervised sessions with other students, and community work. Theory, social contexts and practice of reevaluation counseling is stressed. Other social psychiatric approaches are also covered.

Enrollment limited.

Mr. Stein

SOCIOLOGY 102b. Social Psychiatry

Enrollment limited.

Prerequisite: SOC 102a or equivalent.

Mr. Stein

SOCIOLOGY 103a. The Sociology of Mental Illness and Health

This course will concern itself with various sociological and psychological perspectives on the causes, nature of, and treatment for mental illness. We will also focus on the ways in which mental health is conceptualized as an internal state and an interpersonal process, and on the suggested means through which it might be achieved. We will read and discuss representative works of "established" and "radical" psychiatrists and psychologists; and we will examine the contentions of, and the controversies between different sociological schools of thought in regard to mental health and illness issues.

Enrollment limited to fifty students.

Mr. Schwartz

SOCIOLOGY 106b. Sociology of Literature

The relations between society and literary forms in selected historical periods. Emphasis on the relations between problems and methods in inquiry as presented by sociological and humanistic students of man. *Mr. Stein*

SOCIOLOGY 107aR. Issues in Social Psychology

A review of selected contemporary sociological and social-psychological approaches to understanding the self and the problem of identity. Contemporary forms of social and personal identity in American society will be explored. Students will keep a journal in which they will explore social and psychological dimensions of their own identity, in relation to the concepts of the course. Enrollment limited to 50 students. *Mr. Derber*

SOCIOLOGY 107bR. Issues in Social Psychology

This course will consist of a critical examination of the connections between social personality and social structure as these have been developed in American sociological literature. Special emphasis will rest on how theories of personality and society help to account for social stability and social change. Enrollment limited to 25 students. *Ms. Weissberg*

***SOCIOLOGY 108b. Critiques of Contemporary Society**

SOCIOLOGY 110b. Sociology of Knowledge

History and historical interpretation of the sociology of knowledge, with particular emphasis on German and recent American literature. *Mr. Wolff*

***SOCIOLOGY 111a. Political Sociology**

***SOCIOLOGY 112b. Social Class, Freedom and Equality**

***SOCIOLOGY 116b. Multi-Ethnic Society**

SOCIOLOGY 117a. Work and Society

A comparison of work and occupational systems in various cultures. Social organization of occupations and the place of work in the life of the individual. *Mr. Bittner*

SOCIOLOGY 118a. American Jewish Life and Institutions

See NEJS 161a. *Mr. Sklare*

SOCIOLOGY 118b. Sociology of the American Jewish Community

See NEJS 164b. *Mr. Sklare*

SOCIOLOGY 119b. Social Change Strategy: The Nonviolent Movement

An exploration of the theories, concepts and practices critical to social change strategy, with special focus on the comparison between nonviolent and violent modes of action. The literature will cover biographic works of those who have been involved in major social change efforts, including Ghandi, Fanon, Goldman and Guevara.

Enrollment limited to twenty students. *Ms. Rayman*

***SOCIOLOGY 120a. Sociology of Underdevelopment I**

***SOCIOLOGY 120b. Sociology of Underdevelopment II**

SOCIOLOGY 122a. Sociology of Power

This course will discuss various theories of power, notably those associated with pluralist, Marxist and elite theories of society and politics. *Mr. Miliband*

***SOCIOLOGY 126a. Sociology of Deviance**

SOCIOLOGY 126b. Planned Communities

Exploration of the ideological foundation, organizational structure and achieved reality of planned communities from historical and cross-cultural perspectives. Among the communities examined will be the early city-states, 19th-century utopias, the Israeli kibbutz and the Chinese commune. Full participation by each class member is expected.

***SOCIOLOGY 127b. Deviant Communities**

SOCIOLOGY 128bR. Sociology of Religious Radicalism and Social Conflict

This course will examine a range of social movements operating under religious theories of action. Third World movements of the late 19th and early 20th centuries will be considered together with earlier European and American movements. In each case the methods, targets and theories of religious radicals will be connected to conflict with society as a whole. Readings will include Christopher Hill's *The World Turned Upside Down*, Peter Worley's *The Trumpet Shall Sound*, and James Mooney's *The Ghost Dance Rebellion and the Sioux Outbreak of 1890*. Enrollment limited to 50 students. *Ms. Fields*

SOCIOLOGY 130a. The Family

Study of the family in relationship to the institutions of the larger society. Special attention will be placed on the historical development of the family, the impact of changing sex role definition, and alternative models to the nuclear family. Enrollment limited to 50 students. *Ms. Rayman and Mr. Stein*

***SOCIOLOGY 130b. The Family**

SOCIOLOGY 132a. Urban Field Studies

This course will build a foundation for urban studies through a theoretical and case study orientation. We will first explore the ideas of such classic urbanologists as Weber, Simmel and Park. We will then focus on particular issues of modern urban development including class stratification, ethnic relations and neighborhood viability. Boston will provide opportunities for "close-up" case study. Enrollment limited to 25 students. *Ms. Rayman*

***SOCIOLOGY 132b. Urban Field Studies**

***SOCIOLOGY 133b. Comparative Urban Cultures**

SOCIOLOGY 135aR. Group Process

Interpretation of interpersonal behavior and group development, based in part on observation of the group itself. Readings will include material from psychology and social anthropology as well as sociology. Enrollment limited to twelve students. *Mr. Schwartz*

***SOCIOLOGY 141a. Marx and Freud**

***SOCIOLOGY 141b. Advanced Seminar on Marx and Freud**

SOCIOLOGY 143a. Studies in Social Interaction, The Self and Society

Consideration of the underlying forces connecting (a) the individual and his personality, (b) interaction and interpersonal life, and (c) social structure and culture. Emphasis on cultural themes in advanced capitalistic societies, including individualism, rationalism, careerism and consumerism as they shape personality and interpersonal life in American society. Authors include Erich Fromm, Herbert Marcuse, Philip Rieff, Philip Slater, Ivan Illich and Harry Braverman.

Enrollment limited to sixty students.

Mr. Derber

SOCIOLOGY 145aR. Sociology of Life Styles: Socialization and Social Class

Consideration of the underlying forces connecting (a) the individual and his personality, (b) interaction and interpersonal life, and (c) social structure and culture. Authors include Wilhelm Reich, Erich Fromm, Herbert Marcuse, Philip Rieff and Philip Slater.

Ms. Rosenthal

***SOCIOLOGY 147a. Social Psychology of Organizations and Groups**

***SOCIOLOGY 148a and b. Social Psychology of Consciousness**

***SOCIOLOGY 150a. Sociology of Revolutionary Change**

***SOCIOLOGY 151aR. Social Class in Rural and Urban Settings: Environmental Research**

***SOCIOLOGY 151b. Environmental Research**

SOCIOLOGY 152b. Sociology of Generations: The Adolescent in Society

An exploration of the dynamics of adolescent development in relationship to the experience of the preceding generation and the contemporary social environment. The readings will focus on current theories of adolescent behavior and its sociological correlates.

Ms. Rosenthal

***SOCIOLOGY 154b. Sociology of Science**

***SOCIOLOGY 155bR. Social Movements**

***SOCIOLOGY 163b. Therapy and Punishment (Criminology II)**

SOCIOLOGY 164a. Existential Sociology

Introduction to existential thought and its integration with selected sociological theories on human interaction and anxiety, individual freedom, options for social reorganization and the socio-historical implications of growth, crisis and death. Readings include works by Sartre, Kierkegaard, Nietzsche, Mead, Laing, Merleau-Ponty and others.

Ms. Hayim

SOCIOLOGY 172b. The Family in the United States

See American Studies 150b.

Mr. Fuchs

SOCIOLOGY 175aR. Theories of Social Change and Social Action

Contemporary theories of how social change occurs in advanced class-based societies. Emerging actor for social change: the changing character of the social class structure and the shifting class roots of change agents. Consideration of role of industrial workers, "knowledge" workers, students and professionals, females and minorities as social change actors in the United States.

Enrollment limited to 12 students.

Permission of instructor required.

Mr. Derber

***SOCIOLOGY 180aR. Social Organization and Marxist Politics**

SOCIOLOGY 181a. Methods of Social Research

The purpose of this course is to acquaint the students with how research is done; that is: how research questions are formed, how appropriate techniques are chosen, and how results are interpreted. A selection of research reports using the relevant methodology will be presented and evaluated by the students. The class will select a researchable question and, in the course of the semester, develop alternate research designs either individually or in small groups. *Ms. Rosenthal*

SOCIOLOGY 185a and b. Research Methods and Statistics

See Social Welfare 4.01, 4.02.

Mr. Kurtz

SOCIOLOGY 188b. Sociology of Law

The legal order considered in a framework of cross-cultural and historical comparison. The role of the instruments of the law and of the administration of justice in contemporary society. *Mr. Bittner*

SOCIOLOGY 190b. On the Caring of Caretaker Institutions

An analysis of the structural arrangements of medical practice and of medical settings. Problems of communication and role relationships among professions and between patients and medical personnel will be examined. The impact of structures and role relationships on quality and quantity of medical care and on use of resources will be analyzed. *Mr. Zola*

SOCIOLOGY 191a. Health, Community, and Society

An exploration into interrelationships of the nature of society and societies on the existence and treatment of health and illness. Topics include: conceptions of health and illness, patient careers, and the place of social science in medicine. *Mr. Zola*

SOCIOLOGY 192b. Healing and Healers

Healings and healers are not confined to any single licensed group in our society, no matter how much some would wish it to be so. In addition to describing the characteristics of recruitment, socialization, training, and careers of the established "helping" occupations, we will explore the already existing, sometimes competitive resources, both in our own country and cross-culturally.

Permission of instructor required.

Mr. Zola

SOCIOLOGY 200a. Classical Sociological Theory

Critical readings of the sociologies of Marx, Weber and Durkheim. *Ms. Weissberg*

SOCIOLOGY 200b. Theory in Modern American Sociology

Chicago sociology, role theory, symbolic interactions, structural functionalism and its critics. *Mr. Wolff*

***SOCIOLOGY 203a. Field Methods in Sociological Research**

SOCIOLOGY 203b. Field Methods in Sociological Research

Intensive practice in sociological observation and concentrated field work along with readings and discussion of the theoretical issues involved. *Mr. Stein*

***SOCIOLOGY 204a. Sociology and History**

***SOCIOLOGY 207a. Issues in Higher Education Seminar: Developing a Feminist Theory**

***SOCIOLOGY 208a. Seminar in the Sociology of Organizations**

***SOCIOLOGY 209b. Class and Politics in American Society**

***SOCIOLOGY 211a. Research on Women and Society**

***SOCIOLOGY 214a. Topics in Social Psychology: Freud and the Freudian Tradition**

***SOCIOLOGY 216b. Topics in Social Theory**

SOCIOLOGY 217a. Problems and Concepts in Medical Sociology and Deviance

A general seminar on current research and theoretical issues. Individual projects will be encouraged. *Mr. Zola*

***SOCIOLOGY 218b. Advanced Topics in Sociology: Surrender and Catch**

SOCIOLOGY 219a. Social Systems and Political Forms: The Western Models

This course will discuss the different political forms which have been assumed by capitalist societies on one hand, and Soviet-type societies on the other. The intention is to explore the nature and operation of these different political systems in relation to their economic, social and cultural contexts. *Mr. Miliband*

***SOCIOLOGY 219b. Social Systems and Political Forms: The Soviet and "Third World" Models**

***SOCIOLOGY 220b. Seminar on the Sociology of Politics**

***SOCIOLOGY 221a. Topics in the Sociology of Religion**

SOCIOLOGY 221b. Topics in the Sociology of Religion

Ms. Fields

SOCIOLOGY 226aR. Theories in Social Psychology

Intensive examination of major theories of group process, interpersonal relationships, the self and society, and social interaction. Theorists considered will include Cooley, Mead, Dewey, Goffman, Bateson, Laing and Buber. *Mr. Schwartz*

***SOCIOLOGY 227b. Group Process Seminar**

SOCIOLOGY 228a. Themes in Sociological Theory

An introduction to phenomenology in its bearing on social science and especially sociology through an intensive study of Alfred Schutz. *Mr. Wolff*

***SOCIOLOGY 228b. Themes in Sociological Theory**

SOCIOLOGY 230-251a and b. Readings in Sociological Literature

230a and b.	<i>Mr. Bittner</i>	242a and b.	<i>Mr. Wolff</i>
231a.	<i>Mr. Miliband</i>	243a and b.	<i>Mr. Zola</i>
232a and b.	<i>Mr. Derber</i>	246a and b.	<i>Ms. Hayim</i>
*233a and b.	<i>Mr. Fellman</i>	247a and b.	<i>Ms. Rosenthal</i>
234b.	<i>Mr. Fisher</i>	248a and b.	<i>Mr. Hughes</i>
*238a and b.	<i>Mr. Ross</i>	249a and b.	<i>Ms. Weissberg</i>
239a and b.	<i>Mr. Schwartz</i>	250a and b.	<i>Ms. Fields</i>
240a and b.	<i>Mr. Stein</i>	251a and b.	<i>Ms. Rayman</i>

***SOCIOLOGY 254a and b. Casting and Forecasting of Medical Roles**

SOCIOLOGY 290c. Pro-Seminar

A seminar meeting once a week in which faculty members introduce their interests and research.

Required of all first year graduate students.

Mr. Bittner

SOCIOLOGY 401-421 Dissertation Research

Independent research for the Ph.D. degree.

401.	<i>Mr. Bittner</i>	412.	<i>Mr. Stein</i>
402.	<i>Mr. Miliband</i>	414.	<i>Mr. Wolff</i>
403.	<i>Mr. Derber</i>	415.	<i>Mr. Zola</i>
404.	<i>Mr. Fellman</i>	417.	<i>Ms. Fields</i>
405.	<i>Mr. Fisher</i>	418.	<i>Ms. Hayim</i>
407.	<i>Mr. Hughes</i>	419.	<i>Ms. Rosenthal</i>
410.	<i>Mr. Ross</i>	420.	<i>Ms. Weissberg</i>
411.	<i>Mr. Schwartz</i>	421.	<i>Ms. Rayman</i>

SPANISH

See Joint Program of Literary Studies (page 94).

THEATER ARTS

Objectives

The Master of Fine Arts Program in Theater Arts is designed both to train and to educate — to develop skilled craftsmen of knowledge and judgment about the art.

The curriculum combines professionally oriented training in four theatrical disciplines — *Acting, Directing, Design/Technical* and *Dramatic Writing*. The production program provides extensive practical experience for all students on and behind the

stages of the three Spingold theaters, where the actors act, the directors direct, the designers design and construct, and the playwrights have the opportunity to see their accepted plays performed by casts which may include professional actors-in-residence.

Brandeis University Theater Arts Department is a member of the League of Professional Theater Training Programs.

Admission

The general requirements for admission to the Graduate School, given in an earlier section of this catalog, apply to candidates for admission to this area of study. When applying, students must define their area of concentration: namely, acting, directing, design/technical, or dramatic writing. Besides the standard application materials, the Department requires an audition for applicants in acting and directing, submission of a portfolio for design/technical applicants and submission of an original script (or other example of creative writing) for dramatic writing applicants.

Auditions for actors and directors are held at Brandeis and at other locations in conjunction with the League of Professional Theater Training Programs. Information about times and places for auditions, and the type of audition material to be prepared, will be furnished by the Department *after* applications have been received. Interviews for playwriting and design/technical applicants will be arranged *after* submission of application. Actors and directors are also encouraged to submit resumes and photographs.

Admission is granted for one academic year at a time. Students in residence must make formal application for readmission to the Graduate School by March 1 of their first year in residence.

Faculty

Professor Charles W. Moore, *Chairman*

Professor Howard Bay

Professor James H. Clay

Professor Martin Halpern

Professor Theodore L. Kazanoff

Associate Professor Muriel R. Dolan

Associate Professor Maureen Heneghan

Assistant Professor Daniel Gidron

Assistant Professor Cheryl G. McFadden

Assistant Professor Robert O. Moody

Lecturer Barbara Harris

Teaching Staff: Theodore Janello, Denise Loewenguth

Degree Requirements

Master of Fine Arts

Residence Requirements. Acting: two years. Acting with performance certification: three years. Directing: two years. Directing with production certification: three years. Design/Technical: normally, three years. Playwriting: two years.

Actors normally earn the M.F.A. degree in two years. The third year option with performance certification is by invitation from the faculty based on the student's superior performance during the first two years. The student may elect to accept this invitation or may decline and have the two-year M.F.A. degree conferred. The third year option includes small, specialized classes and roles on the two main stages.

Programs of Study

ACTING

Required Courses First Year:

THEATER ARTS 201. Tutorial in Dramatic Theory and Literature

Prerequisite: Passing an examination administered at the beginning of the first term based on a required summer reading list. *Mr. Gidron*

THEATER ARTS 203. Advanced Acting Studies: I

Messrs. Moore, Gidron and Kazanoff

THEATER ARTS 207. Movement for the Actor: I

Ms. McFadden

THEATER ARTS 209. Voice/Speech Studies for the Actor: I

Ms. Dolan

THEATER ARTS 225. Production Laboratory: I

Mr. Janello

Required Courses Second Year:

THEATER ARTS 204. Advanced Acting Studies: II

Messrs. Moore, Gidron and Kazanoff

THEATER ARTS 208. Movement for the Actor: II

Ms. McFadden

THEATER ARTS 210. Voice/Speech Studies for the Actor: II

Ms. Dolan

THEATER ARTS 226. Production Laboratory: II

Mr. Janello

Required Courses Third Year:

THEATER ARTS 205. Advanced Acting Studies: III

Staff

THEATER ARTS 229. Production Laboratory: III

Staff

Assignment to Movement and/or Voice/Speech classes, Theater Arts 207, 208, 209, 210 for additional study in these areas as necessary, plus selection of additional courses to accommodate the needs of the students. Courses are determined in consultation with the Acting Faculty.

Performance Requirements:

First Year:

Emphasis on classroom work. Students are barred from performance in any production for the first half of the first term. Thereafter, they may audition for Brandeis productions. Please note as applicable to first year students the Performance Requirements stated below for second year actors.

Second Year:

All second year actors are required to audition for and play as cast in all major productions in Theater I and II, unless excused by the chairman after consultation with the director.

Third Year:

Third year students are the core actors for Theater I and II productions. They are required to play as cast in all major productions, unless excused by the chairman after consultation with the director.

Production Requirement:

All acting students are required to serve on a crew for one major department production each year (approximately 60 hours). Normally, this crew may not be for a play in which the student is also performing. If a student has roles in each performance during the year, he must then do two crews on plays in which he is performing. Students are expected to help whenever they have time, regardless of formal credit.

DIRECTING

Required Courses First Year:

THEATER ARTS 201. Tutorial in Dramatic Theory and Literature

Prerequisite: Passing an examination administered at the beginning of the first term based on a required summer reading list. *Mr. Gidron*

THEATER ARTS 203. Advanced Acting Studies: I

Messrs. Moore, Gidron and Kazanoff

THEATER ARTS 207. Movement for the Actor: I

Ms. McFadden

THEATER ARTS 209. Voice/Speech Studies for the Actor: I

Ms. Dolan

THEATER ARTS 213. Advanced Directing

Mr. Moore

THEATER ARTS 225. Production Laboratory: I

Mr. Janello

Required Courses Second Year:

THEATER ARTS 202. Seminar in Dramatic Theory and Literature

Mr. Clay

THEATER ARTS 204. Advanced Acting Studies: II

Messrs. Moore, Gidron and Kazanoff

THEATER ARTS 226. Production Laboratory: II

Mr. Janello

THEATER ARTS 310. Thesis Projects: I

Staff

One or two elective courses to be determined in consultation with the Acting/Directing Faculty.

Required Courses Third Year:

THEATER ARTS 205. Advanced Acting Studies: III

Staff

THEATER ARTS 229. Production Laboratory: III

Staff

THEATER ARTS 311. Thesis Projects: II

Staff

Two elective courses each semester.

Production Requirements:

First year students are required to stage manage on Theater I productions, and direct two workshop productions in Theater III. Acting privileges and restrictions are the same as for first year acting students.

Second year students are normally required to direct one major production in Theater II. They must audition for acting roles in all major productions when

there are no conflicts with directorial assignments.
Third year students will direct one major production in Theater I and II and/or a production cast entirely from undergraduates.

DESIGN-TECHNICAL

First Year:

THEATER ARTS 201. Tutorial in Dramatic Theory and Literature

Prerequisite: Passing an examination administered at the beginning of the first term based on a required summer reading list. *Mr. Gidron*

THEATER ARTS 211. Scenic Design: I

Mr. Bay

THEATER ARTS 214. Costume Construction

Laboratory fee: \$10.00 .

Ms. Loewenguth

THEATER ARTS 217. Costume Design

Ms. Heneghan

THEATER ARTS 219. Lighting Design: I

Laboratory fee: \$5.00 per term .

Ms. Harris

THEATER ARTS 221. Sketching and Rendering: I

Mr. Moody

THEATER ARTS 222. Drafting

Laboratory fee: \$10.00 per term .

Mr. Hamilton

THEATER ARTS 223. Scenic Painting: I

Laboratory fee: \$20.00 per term .

Mr. Moody

THEATER ARTS 225. Production Laboratory: I

Mr. Janello

THEATER ARTS 230. Life Drawing: I

Laboratory fee required .

Mr. Moody

Second Year:

THEATER ARTS 212. Scenic Design: II

Mr. Bay

THEATER ARTS 218. Advanced Costume Design

Ms. Heneghan

THEATER ARTS 220. Lighting Design: II

Laboratory fee: \$5.00 per term .

Ms. Harris

THEATER ARTS 224. Stage Mechanics

Laboratory fee: \$5.00 .

Mr. Hamilton

THEATER ARTS 226. Production Laboratory: II

Mr. Janello

THEATER ARTS 227. Sketching and Rendering: II

Mr. Moody

THEATER ARTS 228. Scenic Painting: II

Laboratory fee: \$20.00 per term .

Mr. Moody

THEATER ARTS 231. Life Drawing: II

Laboratory fee required.

*Mr. Moody**Third Year:*

Some projects in the “300” courses require laboratory fees.

THEATER ARTS 300. Independent Study*Staff***THEATER ARTS 310. Thesis Projects***Staff*

Thesis Project and Participation in Productions. The graduate design thesis is the final project in the design/technical program. It is the full presentation of projected designs for the scenery, costumes and lighting for a specific play or opera presented in portfolio form, with the emphasis depending upon the student’s major field of interest — sets, lighting, or costumes. In some cases, a student’s main-stage design assignments in the second or third year may constitute part of the thesis project.

All major productions are designed by graduate students. Therefore, a student may be expected to be involved in a design capacity on at least three productions during each year. In addition, students will participate on various production crews as arranged in conference with the design faculty.

DRAMATIC WRITING*First Year:***THEATER ARTS 201. Tutorial in Dramatic Theory and Literature**

Prerequisite: Passing an examination administered at the beginning of the first term based on a required summer reading list.

*Mr. Gidron***THEATER ARTS 215. Seminar in Dramatic Writing: I** *Messrs. Halpern and Levy***THEATER ARTS 225. Production Laboratory: I***Mr. Janello*

One elective course each semester.

*Second Year:***THEATER ARTS 202. Seminar in Dramatic Theory and Literature** *Mr. Clay***THEATER ARTS 216. Seminar in Dramatic Writing: II** *Messrs. Halpern and Levy***THEATER ARTS 226. Production Laboratory: II** *Mr. Janello***THEATER ARTS 310b. Thesis Projects** *Staff*

One elective course in the first semester.

Performance and Production Requirements. Playwriting students are required to participate in the preparation of any studio, workshop, or major production of their plays mounted during the time they are in residence. They are also required to serve on two crews each year (approximately 120 hours per year).

University Organization

Board of Trustees

Under Massachusetts law, the 50-member Board of Trustees is the governing body of the University. There are also four faculty representatives and three student representatives to the Board who participate in Board meetings and have votes on the several committees. The Chairman of the Board of Fellows, the President of the National Women's Committee, and the President of the Alumni Association serve *ex-officio*. Alumni elect annually an Alumni Term Trustee who serves as full voting Trustee for a five-year term.

The President and the Chancellor

The President is the chief executive officer of the University. He is appointed by the Board of Trustees and is responsible for all University activities. Chancellor of the University is an honorary title held by Abram L. Sachar, whose 20 years of experience as first president of Brandeis is now utilized for the welfare of the University. The Chancellorship carries no administrative responsibilities.

Academic Deans

The Dean of Faculty supervises academic policy, undergraduate and graduate curricula, the faculty and its department of instruction.

The Dean of the College of Arts and Sciences assumes responsibility for many areas affecting the academic lives of undergraduates, including curriculum development, advisory services and the academic progress of students.

The Dean of the Graduate School of Arts and Sciences oversees the individualized programs of study for scholars, scientists and artists in 21 disciplines.

The Dean of the Florence Heller Graduate School for Advanced Studies in Social Welfare oversees the academic activities of the University's first and only professional school, and its work in such areas as health, aging, income and employment, and minorities.

The Faculty Senate

The Faculty Senate, the elected representative body of the faculty, discusses such issues as academic freedom and responsibility, University policy, appointments, tenure, dismissal and salaries.

The Board of Fellows

Created in 1951, the Board of Fellows consists of more than 450 national leaders from a broad base of business, educational and public life. Its members lend counsel, expertise and support to University development and planning programs.

The President's Council

President's Councilors are leading men and women throughout the country whose skills and experience are placed at the disposal of the Brandeis President in areas of their special competence.

National Women's Committee

The National Women's Committee, now an organization of approximately 60,000 members, has been a partner with the University since 1948. This volunteer organization gives its membership a wide range of educational offerings. These include unique study group programs with syllabi provided by Brandeis faculty; adult education seminars in local communities called "University on Wheels;" and special lectures by University speakers. The 115 chapters across the country are embassies of good will for the University. The central commitment of the Women's Committee, however, is to the Brandeis University libraries. Since it was founded by eight members in Boston, it has raised 14.8 million dollars in support of the libraries.

University Libraries

From an initial 2,000 volumes housed in a remodeled stone stable in 1948, the holdings of the Goldfarb Library and the Gerstenzang Library of Science today number more than 729,500 volumes, including microtexts. The libraries boast an impressive collection of microfilm holdings, as well as periodical titles and newspapers.

Alumni Relations

The Office of Alumni Relations, located in the Gryzmish Academic Center, directs and coordinates programs and publications for about 13,000 Brandeis alumni, the National Alumni Association, regional Alumni Chapters and the Alumni Fund.



The Graduate Council

The members of the Graduate Council of the Graduate School of Arts and Sciences are appointed annually by the President of the University. Members of the Graduate Council for 1978-79 are:

The President of the University *and* The Dean of the Faculty of Arts and Sciences (*ex officio*)

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Jack S. Goldstein, *Dean of Faculty and*
Professor of Astrophysics
Ph.D., Cornell University

Robert J. Art, *Dean of the Graduate School,*
Associate Dean of Faculty and
Christian A. Herter Associate Professor of
International Relations
Ph.D., Harvard University

Robert Evans, Jr., *Dean of the College,*
Associate Dean of Faculty and Atran
Professor of Economics
Ph.D., University of Chicago

Timothy C. Aarset, *Performing Artist-in-*
Residence (Music)
D.M.A., Stanford University

Robert H. Abeles, *Aron and Imre Tauber*
Professor of Biochemistry and Molecular
Pharmacology
Ph.D., University of Colorado

***Jeffrey B. Abramson**, *Assistant Professor*
of Politics
Ph.D., Harvard University

Allan Adler, *Assistant Professor of Mathematics*
Ph.D., State University of New York, Stony
Brook

****Henry D. Aiken**, *Charles Goldman Professor*
of Philosophy and History of Ideas
Ph.D., Harvard University

Alexander Altmann, *Professor Emeritus of*
Jewish Philosophy and History of Ideas
Ph.D., University of Berlin

Teresa M. Amabile, *Assistant Professor of*
Psychology
Ph.D., Stanford University

Allen L. Anderson, *Instructor in Music*
M.F.A., Brandeis University

Lawrence E. Arend, Jr., *Assistant Professor of*
Psychology
Ph.D., Duke University

***Maurice Auslander**, *Sol Kittay Professor of*
Mathematics
Ph.D., Columbia University

Geoffrey Barraclough, *Professor of History*
M.A., Oriol College, Oxford, England

Howard Bay, *Alan King Professor of*
Theater Arts

Carl I. Belz, *Lecturer in Fine Arts and Director,*
Rose Art Museum
Ph.D., Princeton University

James R. Bensinger, *Assistant Professor*
of Physics
Ph.D., University of Wisconsin

Margaret H. Bent, *Professor of Music*
Ph.D., Cambridge University

Arthur Berger, *Irving Fine Professor of Music*
M.A., Harvard University

Stephan Berko, *William R. Kenan, Jr., Professor*
of Physics
Ph.D., University of Virginia

***David Sandler Berkowitz**, *Professor of History*
Ph.D., Harvard University

Joseph S. Berliner, *Rosen Family Professor*
of Economics
Ph.D., Harvard University

Gerald S. Bernstein, *Associate Professor*
of Fine Arts
Ph.D., University of Pennsylvania

Rudolph Binion, *Leff Families Professor of*
Modern European History
Ph.D., Columbia University

Robert H. Binstock, *Louis Stulberg Professor of*
Politics and Social Welfare
Ph.D., Harvard University

Egon Bittner, *Harry Coplan Professor in the*
Social Sciences
Ph.D., University of California, Los Angeles

Eugene C. Black, *Ottillie Springer Professor*
of History
Ph.D., Harvard University

Shelia R. Bland, *Instructor in African and Afro-*
American Studies
M.A., University of New Orleans

Ludovico Borgo, *Robert B. Mayer Memorial*
Associate Professor of Fine Arts
Ph.D., Harvard University

Alain-Michel Boyer, *Lecturer in French*
Agrégé des Lettres, University of Lyon

Martin Boykan, *Professor of Music*
M.M., Yale School of Music

Paul H. Brainard, *Professor of Music*
Ph.D., University of Gottingen

***Naftali C. Brandwein**, *Rose B. and*
Joseph H. Cohen Professor of
Modern Hebrew Literature
D.R.E., Jewish Theological Seminary

*On leave, 1978-79.

**On leave, Fall Term, 1978-79.

- Robert Brannum**, *Lecturer with rank of Assistant Professor of Physical Education*
B.S., Michigan State University
- Yale M. Braunstein**, *Assistant Professor of Economics*
Ph.D., Stanford University
- Edgar H. Brown, Jr.**, *Jennie Sapirstein Professor of Mathematics*
Ph.D., Massachusetts Institute of Technology
- Paul L. Brown**, *Artist-in-Residence (Fine Arts)*
M.F.A., Yale School of Art and Architecture
- Seyom Brown**, *Professor of Politics*
Ph.D., University of Chicago
- Robert Bruner**, *Assistant Professor of Mathematics*
Ph.D., University of Chicago
- David A. Buchsbaum**, *Professor of Mathematics*
Ph.D., Columbia University
- L. Edward Cannon III**, *Assistant Professor of Biology and Rosenstiel Basic Medical Sciences Research Center*
Ph.D., University of Georgia
- Karl F. Canter**, *Assistant Professor of Physics*
Ph.D., Wayne State University
- *Anne P. Carter**, *Fred C. Hecht Professor of International Economics*
Ph.D., Harvard University
- Donald L.D. Caspar**, *Professor of Physics and Rosenstiel Basic Medical Sciences Research Center*
Ph.D., Yale University
- *Iu-Yam Chan**, *Associate Professor of Chemistry*
Ph.D., University of Chicago
- Ju-hsiang Ch'uan**, *Assistant Professor of Chinese Language (History Department)*
A.B., Central Academy of Music, People's Republic of China
- Max Chrétien**, *Associate Professor of Physics*
Ph.D., University of Basel
- Brian O. Clark**, *Assistant Professor of Physics*
Ph.D., Harvard University
- Timothy V. Clark**, *Instructor in Music*
B.Mus., Oberlin College Conservatory of Music
- James H. Clay**, *Professor of Theater Arts*
Ph.D., University of Illinois
- Helen Codere**, *Professor of Anthropology*
Ph.D., Columbia University
- **Carolyn Cohen**, *Professor of Biology and Rosenstiel Basic Medical Sciences Research Center*
Ph.D., Massachusetts Institute of Technology
- **Jacob Cohen**, *Associate Professor of American Studies*
M.A., Yale University
- Jacques Cohen**, *Associate Professor of Physics*
Ph.D., University of Illinois
- Marjorie M. Cohen**, *Instructor in Music*
M.F.A., Brandeis University
- Saul G. Cohen**, *University Professor, Charles A. Breskin Professor of Chemistry*
Ph.D., Harvard University
- André M. Collard**, *Associate Professor of Spanish*
Ph.D., Harvard University
- Michael W. Coven**, *Lecturer in Physical Education*
Ed.M., Springfield College
- George L. Cowgill**, *Professor of Anthropology*
Ph.D., Harvard University
- Mark Cummings**, *Assistant Professor of History*
Ph.D., University of Colorado
- J. V. Cunningham**, *University Professor, Paul E. Prosswimmer Professor of English and Humanities*
Ph.D., Stanford University
- Charles Cutter**, *Lecturer in Near Eastern and Judaic Studies*
M.L.S., Pratt Institute
- Margaret Dalton**, *Associate Professor of Russian*
Ph.D., Harvard University
- **Marvin G. Davis**, *Assistant Professor of Anthropology*
Ph.D., University of Chicago
- William DeJong**, *Assistant Professor of Psychology*
Ph.D., Stanford University
- John Putnam Demos**, *Professor of History*
M.A., University of California, Berkeley
- Charles Derber**, *Assistant Professor of Sociology*
Ph.D., University of Chicago
- David J. DeRosier**, *Professor of Physics and Rosenstiel Basic Medical Sciences Research Center*
Ph.D., University of Chicago
- Stanley Deser**, *Professor of Physics*
Ph.D., Harvard University
- Muriel Rita Dolan**, *Associate Professor of Theater Arts*
M.F.A., Catholic University of America
- F. Trenery Dolbear, Jr.**, *Clinton S. Darling Professor of Economics*
Ph.D., Yale University
- Paul B. Dorain**, *Professor of Chemistry*
Ph.D., Indiana University
- Emily P. Dudek**, *Adjunct Associate Professor of Chemistry*
Ph.D., Radcliffe College

*On leave, 1978-79.

**On leave, Fall Term, 1978-79.

- James E. Duffy**, *Professor of Romance Literature and History*
Ph.D., Harvard University
- David Eisenbud**, *Associate Professor of Mathematics*
Ph.D., University of Chicago
- Edward Engelberg**, *Professor of Comparative Literature*
Ph.D., University of Wisconsin
- Robert M. Ephraim**, *Assistant Professor of Mathematics*
Ph.D., Princeton University
- Herman T. Epstein**, *Professor of Biophysics*
Ph.D., University of Michigan
- Irving R. Epstein**, *Associate Professor of Chemistry*
Ph.D., Harvard University
- Gerald D. Fasman**, *Louis I. and Bessie Rosenfield Professor of Biochemistry*
Ph.D., California Institute of Technology
- *Leonard J. Fein**, *Klutznick Family Professor of Contemporary Jewish Studies*
Ph.D., Michigan State University
- Jerry M. Feinberg**, *Assistant Professor of Mathematics*
Ph.D., Stanford University
- Elliot J. Feldman**, *Assistant Professor of Politics*
Ph.D., Massachusetts Institute of Technology
- *Gordon A. Fellman**, *Associate Professor of Sociology*
Ph.D., Harvard University
- Ronald F. Ferguson**, *Instructor in African and Afro-American Studies*
B.A., Cornell University
- Judith Ferster**, *Assistant Professor of English*
Ph.D., Brown University
- Karen E. Fields**, *Assistant Professor of Sociology*
Ph.D., Brandeis University
- Randall K. Filer**, *Instructor in Economics*
B.A., Haverford College
- David Hackett Fischer**, *Earl Warren Professor of History*
Ph.D., The Johns Hopkins University
- Michael Fishbane**, *Samuel Lane Associate Professor of Jewish History and Social Ethics*
Ph.D., Brandeis University
- **Charles S. Fisher**, *Associate Professor of Sociology*
Ph.D., University of California, Berkeley
- Philip Fisher**, *Assistant Professor of English*
Ph.D., Harvard University
- Susan Forbes**, *Assistant Professor of American Studies*
Ph.D., University of Pennsylvania
- Marvin Fox**, *Philip W. Lown Professor of Jewish Philosophy*
Ph.D., University of Chicago
- Bruce M. Foxman**, *Associate Professor of Chemistry*
Ph.D., Massachusetts Institute of Technology
- Douglas Frame**, *Visiting Assistant Professor of Classical and Oriental Studies*
Ph.D., Harvard University
- Gregory L. Freeze**, *Associate Professor of History*
Ph.D., Columbia University
- Karen A. J. Freeze**, *Lecturer in History*
Ph.D., Columbia University
- David M. Freifelder**, *Professor of Biochemistry*
Ph.D., University of Chicago
- Eberhard Frey**, *Associate Professor of German*
Ph.D., Cornell University
- Lawrence H. Fuchs**, *Meyer and Walter Jaffe Professor of American Civilization and Politics*
Ph.D., Harvard University
- Chandler M. Fulton**, *Professor of Biology*
Ph.D., Rockefeller Institute
- Joachim E. Gaehde**, *Sidney and Ellen Wien Professor in the History of Art*
Ph.D., New York University
- Miriam Galston**, *Assistant Professor of Near Eastern and Judaic Studies*
Ph.D., University of Chicago
(On the Andrew Mellon Foundation)
- Stephen J. Gendzier**, *Associate Professor of French*
Ph.D., Columbia University
- Paul Gordon Georges**, *Visiting Professor of Fine Arts*
- Martin Gibbs**, *Professor of Biology*
Ph.D., University of Illinois
- Daniel Gidron**, *Assistant Professor of Theater Arts*
M.F.A., Brandeis University
- Michael T. Gilmore**, *Associate Professor of English*
Ph.D., Harvard University
- Nahum Norbert Glatzer**, *Professor Emeritus of Jewish History and Social Ethics*
Ph.D., University of Frankfurt
- Ariella D. Goldberg**, *Assistant Professor of Hebrew*
Ph.D., Brandeis University
- Susan Goldberg**, *Assistant Professor of Psychology*
Ph.D., University of Massachusetts, Amherst
- Sidney Golden**, *Henry F. Fishbach Professor of Chemistry*
Ph.D., Harvard University

*On leave, 1978-79.

**On leave, Fall Term, 1978-79.

- Maynard Goldman**, *Performing Artist-in-Residence (Music)*
B.Mus., Boston University
- William M. Goldsmith**, *Associate Professor of American Studies*
Ph.D., Columbia University
- D. Neil Gomberg**, *Instructor in Anthropology*
M.A., University of Michigan
- Cyrus H. Gordon**, *Professor Emeritus of Mediterranean Studies*
Ph.D., University of Pennsylvania
- Robert S. Greenberg**, *Associate Professor of Philosophy*
Ph.D., University of Chicago
- Jane B. Grimshaw**, *Lecturer with rank of Assistant Professor of Linguistics*
Ph.D., University of Massachusetts, Amherst
- Peter Grippe**, *Lester and Joan Avnet Professor of Sculpture*
- Marcus T. Grisaru**, *Professor of Physics*
Ph.D., Princeton University
- Eugene P. Gross**, *Edward and Gertrude Swartz Professor of Theoretical Physics*
Ph.D., Princeton University
- Allen R. Grossman**, *Professor of English*
Ph.D., Brandeis University
- Roy F. Grow**, *Assistant Professor of Politics*
Ph.D., University of Michigan
- Ernest Grunwald**, *Professor of Chemistry*
Ph.D., University of California, Los Angeles
- Mildred Guberman**, *Lecturer in Jewish Communal Service*
M.S.W., Columbia University
- James E. Haber**, *Associate Professor of Biology and Rosenstiel Basic Medical Sciences Research Center*
Ph.D., University of California, Berkeley
- Robert Hahn**, *Assistant Professor of Philosophy*
Ph.D., Yale University
- Jeffrey C. Hall**, *Assistant Professor of Biology*
Ph.D., University of Washington
(National Institutes of Health Career Development Award)
- Shirley L. Hall**, *Lecturer in African and Afro-American Studies*
M.A., Boston University
- Benjamin Halpern**, *Richard Koret Professor of Near Eastern Studies*
Ph.D., Harvard University
- ***Martin Halpern**, *Samuel and Sylvia Schulman Professor of Theater Arts*
Ph.D., Harvard University
- Harlyn O. Halvorson**, *Professor of Biology and Director, Rosenstiel Basic Medical Sciences Research Center*
Ph.D., University of Illinois
- Eugenia Hanfmann**, *Professor Emerita of Psychology*
Ph.D., University of Jena
- David A. Hanson**, *Lecturer with rank of Assistant Professor of Russian*
Ph.D., Harvard University
- Barbara A. Harris**, *Lecturer in Theater Arts*
M.F.A., Yale School of Drama
- Michael Harris**, *Assistant Professor of Mathematics*
Ph.D., Harvard University
- **Victor Harris**, *Edytha Macy Gross Professor of Humanities*
Ph.D., University of Chicago
- *Erica Harth**, *Associate Professor of French and Comparative Literature*
Ph.D., Columbia University
- Gila J. Hayim**, *Assistant Professor of Sociology*
Ph.D., University of Pennsylvania
- Peter Heller**, *Professor of Physics*
Ph.D., Harvard University
- Michael J. Henchman**, *Associate Professor of Chemistry*
Ph.D., Yale University
- Kittredge Henchman-Locke**, *Adjunct Instructor in the Teaching of English as a Foreign Language*
B.A., Smith College
- James B. Hendrickson**, *Professor of Chemistry*
Ph.D., Harvard University
- Maureen Heneghan**, *Associate Professor of Costume Design*
- Lynna Hereford**, *Adjunct Assistant Professor of Biology and Rosenstiel Basic Medical Sciences Research Center*
Ph.D., Yale University
- Maurice Hershenson**, *George and Frances Levin Associate Professor of Psychology*
Ph.D., Yale University
- William E. Higgins**, *Assistant Professor of Classical and Oriental Studies*
Ph.D., Harvard University
- Donald Hindley**, *Professor of Politics*
Ph.D., Australian National University
- Milton Hindus**, *Professor of English*
M.S., City College of New York
- Hyun Höchsmann**, *Assistant Professor of Philosophy*
Ph.D., University of London
- Thomas C. Hollocher, Jr.**, *Associate Professor of Biochemistry*
Ph.D., University of Rochester
- Jen-Shiang Hong**, *Assistant Professor of Biochemistry*
Ph.D., University of California, Berkeley

*On leave, 1978-79.

**On leave, Fall Term, 1978-79.

***On leave, Spring Term, 1978-79.

David M. Hoose, *Instructor in Music*
B.M., Oberlin College Conservatory of Music

Benjamin B. Hoover, *Professor of English*
Ph.D., University of California, Berkeley

James E. Hopper, *Adjunct Assistant Professor
of Biology and Rosenstiel Basic Medical
Sciences Research Center*
Ph.D., University of Wisconsin

Judith A. Houde, *Lecturer in Physical
Education*
M.S.Ed., University of Tennessee

Everett C. Hughes, *Professor Emeritus of
Sociology*
Ph.D., University of Chicago

Mark L. Hulliung, *Associate Professor of
Politics*
Ph.D., Harvard University

Robert C. Hunt, *Associate Professor of
Anthropology*
Ph.D., Northwestern University

Kiyoshi Igusa, *Assistant Professor of
Mathematics*
Ph.D., Princeton University

David J. Ingle, *Visiting Associate Professor of
Psychology*
Ph.D., University of Chicago

Judith T. Irvine, *Assistant Professor of
Anthropology*
Ph.D., University of Pennsylvania

Ronald S. Irving, *Assistant Professor of
Mathematics*
Ph.D., Massachusetts Institute of Technology

Alfred L. Ivry, *Walter Stern Hilborn Professor
of Judaic Studies*
D.Phil., University of Oxford

Ray S. Jackendoff, *Professor of Linguistics*
Ph.D., Massachusetts Institute of Technology

David Jacobson, *Associate Professor of
Anthropology*
Ph.D., University of Rochester

Frank R. Jacoby, *Lecturer in German*
Ph.D., Columbia University

Pierre-Yves Jacopin, *Lecturer in Anthropology*
Dipl., Sorbonne University

Hans P. Jakobsen, *Assistant Professor of
Mathematics*
Ph.D., Massachusetts Institute of Technology

William P. Jencks, *Gyula and Katia Tauber
Professor of Biochemistry and
Molecular Pharmacodynamics*
M.D., Harvard University

Leon A. Jick, *Helen and Irving Schneider
Associate Professor of American
Jewish Studies*
Ph.D., Columbia University

William A. Johnson, *Albert V. Danielsen
Professor of Philosophy and
Christian Thought*
Ph.D., Columbia University

Patricia A. Johnston, *Assistant Professor of
Classical and Oriental Studies*
Ph.D., University of California, Berkeley

Robert C. Jones, *Lecturer in African and
Afro-American Studies*
B.A., Brandeis University

Peter C. Jordan, *Associate Professor of
Chemistry*
Ph.D., Yale University

George Joseph, *Assistant Professor of French*
Ph.D., Indiana University

Lisel K. Judge, *Professor of Physical Education*
M.Ed., Northeastern University

Donald N. Kaiser, *Assistant Professor of
Psychology*
Ph.D., Ohio State University

David Kaplan, *Professor of Anthropology*
Ph.D., University of Michigan

Edward K. Kaplan, *Assistant Professor of
French*
Ph.D., Columbia University

Walter Kasell, *Assistant Professor of French and
Comparative Literature*
Ph.D., Cornell University

Aaron L. Katchen, *Instructor in Near Eastern
and Judaic Studies*
A.B., Brooklyn College

Fredric M. Katz, *Instructor in Philosophy*
B.S., Massachusetts Institute of Technology

Theodore L. Kazanoff, *Professor of
Theater Arts*
M.A., Smith College

Ashenafi Kebede, *Assistant Professor of Music
and African and Afro-American Studies*
Ph.D., Wesleyan University

Phillip M. Keehn, *Associate Professor of
Chemistry*
Ph.D., Yale University

Allan R. Keiler, *Assistant Professor of Music*
Ph.D. (Linguistics), Harvard University

Morton Keller, *Samuel J. and
Augusta Spector Professor of History*
Ph.D., Harvard University

Robert J. Kelley, Jr., *Instructor in
Physical Education*
M.B.A., Babson College

Albert Kelner, *Abraham S. and Gertrude Burg
Professor of Microbiology*
Ph.D., University of Pennsylvania

*On leave, 1978-79.

**On leave, Fall Term, 1978-79.

***On leave, Spring Term, 1978-79.

Edith Kern, *Jacob Ziskind Visiting Professor of French and Comparative Literature*
Ph.D., The Johns Hopkins University
(Hofstra University)

Alexander Keyssar, *Assistant Professor of History*
Ph.D., Harvard University

Reuven R. Kimelman, *Assistant Professor of Near Eastern and Judaic Studies*
Ph.D., Yale University

Lawrence E. Kirsch, *Associate Professor of Physics and Director of Feldberg Computer Center*
Ph.D., Rutgers University

Attila O. Klein, *Associate Professor of Biology*
Ph.D., Indiana University

Karen Wilk Klein, *Associate Professor of English*
Ph.D., Columbia University

Raymond Knight, *Assistant Professor of Psychology*
Ph.D., University of Minnesota

John Knowles, *Instructor in Music*
B.A., Michigan State University

Robert Lincoln Koff, *Professor of Music and Artist-in-Residence*
B.Mus., Oberlin College

Rosalind Koff, *Artist-in-Residence (Music)*

Miroslav Krek, *Lecturer in Bibliography*
M.L.S., University of Chicago Graduate Library School

Samuel Krislov, *Professor of Politics*
Ph.D., Princeton University

Kenneth Kustin, *Professor of Chemistry*
Ph.D., University of Minnesota

James R. Lackner, *Meshulam and Judith Riklis Associate Professor of Psychology*
Ph.D., Massachusetts Institute of Technology

Robert V. Lange, *Associate Professor of Physics*
Ph.D., Harvard University

Richard H. Lansing, *Associate Professor of Italian and Comparative Literature*
Ph.D., University of California, Berkeley

*****Alan Lelchuk**, *Writer-in-Residence (English)*
Ph.D., Stanford University

Christopher Leman, *Assistant Professor of Politics*
Ph.D., Harvard University

Max Lerner, *Professor Emeritus of American Civilization and Institutions*
Ph.D., Robert Brookings Graduate School

Israel Levin, *Visiting Professor of Hebrew Literature*
Ph.D., The Hebrew University
(Tel Aviv University)

Martin A. Levin, *Associate Professor of Politics*
Ph.D., Harvard University

Harold I. Levine, *Professor of Mathematics*
Ph.D., University of Chicago

Jerome P. Levine, *Professor of Mathematics*
Ph.D., Princeton University

Lawrence Levine, *Professor of Biochemistry*
Sc.D., The Johns Hopkins University
(American Cancer Society Professorship)

Norman E. Levine, *Associate Professor of Physical Education*
B.S., Bates College

Richard L. Levine, *Harold and Harriet Toor Lecturer in Legal Studies*
LL.B., Harvard Law School

Alan I. Levitan, *Associate Professor of English*
Ph.D., Princeton University

Avigdor Levy, *Associate Professor of Near Eastern and Judaic Studies*
Ph.D., Harvard University

Jonathan Levy, *Fannie Hurst Visiting Professor of Theater Arts*
Ph.D., Columbia University
(SUNY, Stony Brook)

Denah L. Lida, *Professor of Spanish*
Ph.D., University of Mexico

Anthony K. Lima, *Instructor in Economics*
M.A., Stanford University

*****Henry Linschitz**, *Helena Rubinstein Professor of Chemistry*
Ph.D., Duke University

Alexander Lipson, *Lecturer in Russian*
M.A., University of Chicago

John E. Lisman, *Assistant Professor of Biology*
Ph.D., Massachusetts Institute of Technology

Elaine P. Loeffler, *Associate Professor of Fine Arts*
B.A., Smith College

John M. Lowenstein, *Helena Rubinstein Professor of Biochemistry*
Ph.D., London University

*****Susan Lowey**, *Professor of Biochemistry and Rosenstiel Basic Medical Sciences Research Center*
Ph.D., Yale University

*****Roy C. Macridis**, *Lawrence A. Wien Professor of International Cooperation*
Ph.D., Harvard University

****Donald L. Maddox**, *Assistant Professor of Romance Literature*
Ph.D., Duke University
(On the Andrew Mellon Foundation)

****Robert J. Maeda**, *Associate Professor of Fine Arts*
Ph.D., Harvard University

**On leave, Fall Term, 1978-79.

***On leave, Spring Term, 1978-79.

- Pierre F. Maldague**, *Assistant Professor of Physics*
Ph.D., Massachusetts Institute of Technology
- Joan M. Maling**, *Assistant Professor of Linguistics*
Ph.D., Massachusetts Institute of Technology
- Robert A. Manners**, *Ralph Levitz Professor of Social Anthropology*
Ph.D., Columbia University
- Frank E. Manuel**, *Alfred and Viola Hart University Professor*
Ph.D., Harvard University
- Eve E. Marder**, *Assistant Professor of Biology*
Ph.D., University of California, San Diego
- Teruhisa Matsusaka**, *Irving Schneider Professor of Mathematics*
D.Sc., Kyoto University
- John F. Matthews**, *Max Richter Professor of American Civilization and Institutions*
A.B., University of Cincinnati
- Alan L. Mayer**, *Professor of Mathematics*
Ph.D., Princeton University
- *Leslie Ann McArthur**, *Associate Professor of Psychology*
Ph.D., Yale University
- Cheryl G. McFadden**, *Assistant Professor of Theater Arts*
B.A., Brandeis University
- Robert B. Meyer**, *Associate Professor of Physics*
Ph.D., Harvard University
- Marvin Meyers**, *Harry S. Truman Professor of American Civilization*
Ph.D., Columbia University
- Ralph Miliband**, *Visiting Professor of Sociology and Sophie Davis Fellow*
Ph.D., London School of Economics
(University of Leeds)
- Debra Lynn Miller**, *Instructor in Politics*
A.B., University of California, Berkeley
- Christopher Miller**, *Assistant Professor of Biochemistry*
Ph.D., University of Pennsylvania
- Izchak Miller**, *Instructor in Philosophy*
B.A., University of California, Los Angeles
- Paul H. Monsky**, *Professor of Mathematics*
Ph.D., University of Chicago
- Robert O. Moody, Jr.**, *Assistant Professor of Theater Arts*
- Charles W. Moore**, *Professor of Theater Arts*
M.F.A., Yale University
- Ricardo B. Morant**, *Minnie and Harold L. Fierman Professor of Psychology*
Ph.D., Clark University
- *Ruth Schachter Morgenthau**, *Adlai E. Stevenson Professor of International Politics*
Ph.D., Oxford University, England
- Martha A. Morrison**, *Lecturer with the rank of Assistant Professor of Classical and Oriental Studies*
Ph.D., Brandeis University
- Leonard C. Muellner**, *Associate Professor of Classical and Oriental Studies*
Ph.D., Harvard University
- **William T. Murakami**, *Associate Professor of Biochemistry*
Ph.D., University of Southern California
- Alfred Nisonoff**, *Professor of Biology and Rosenstiel Basic Medical Sciences Research Center*
Ph.D., The Johns Hopkins University
- Joan L. Nissman**, *Instructor in Fine Arts*
M.A., Columbia University
- Edward C. Nowacki**, *Instructor in Music*
B.A., University of Toronto
- Wellington W. Nyangoni**, *Assistant Professor of African and Afro-American Studies*
Ph.D., Howard University
- Thomas P. O'Connell**, *Assistant Professor of Physical Education*
M.Ed., Suffolk University
- Susan Moller Okin**, *Assistant Professor of Politics*
Ph.D., Harvard University
- James D. Olesen**, *Assistant Professor of Music*
B.A., University of Chicago
- Richard J. Onorato**, *Associate Professor of English*
Ph.D., Harvard University
- Richard S. Palais**, *Professor of Mathematics*
Ph.D., Harvard University
- Hugh N. Pendleton III**, *Professor of Physics*
Ph.D., Carnegie Institute of Technology
- Robert J. Pero**, *Visiting Assistant Professor of Fine Arts*
M.A., University of Iowa
- *Peter A. Petri**, *Assistant Professor of Economics*
Ph.D., Harvard University
- Conrad Pope**, *Instructor in Music*
M.F.A., Princeton University
- Richard A. Poster**, *Assistant Professor of Physics*
Ph.D., University of California, Los Angeles
- Joan L. Press**, *Assistant Professor of Biology and Rosenstiel Basic Medical Sciences Research Center*
Ph.D., University of Pennsylvania

*On leave, 1978-79.

**On leave, Fall Term, 1978-79.

Robert O. Preyer, *Professor of English*
Ph.D., Columbia University

Frank Templeton Prince, *Fannie Hurst Visiting Professor of English*
M.A., Oxford University, England

Lawrence B. Pulley, *Instructor in Economics*
B.A., College of William and Mary

Judith Rauchwarger, *Assistant Professor of Spanish*
Ph.D., University of Michigan

Benjamin C. I. Ravid, *Jennie and Mayer Weisman Associate Professor of Jewish History*
Ph.D., Harvard University

Esther E. Rawidowicz, *Assistant Professor Emerita of German*
Ph.D., University of Berlin

Paula Rayman, *Assistant Professor of Sociology*
Ph.D., Boston College

Alfred G. Redfield, *Professor of Physics and Biochemistry and Rosenstiel Basic Medical Sciences Research Center*
Ph.D., University of Illinois

Bernard Reisman, *Associate Professor of American Jewish Communal Studies and Director, Hornstein Program*
Ph.D., Brandeis University, Heller Graduate School

***Joshua Rifkin**, *Associate Professor of Music*
M.F.A., Princeton University

Bryan E. Roberts, *Assistant Professor of Biology*
Ph.D., University of Oxford, England

Marguerite S. Robinson, *Associate Professor of Anthropology*
Ph.D., Harvard University

***Charles Rockland**, *Assistant Professor of Mathematics*
Ph.D., Princeton University

Nicholas Rodis, *Professor of Physical Education*
Ed.M., American International College

James A. Rondeau, *Instructor in Physical Education*
M.Ed., Boston University

Dov Ronen, *Visiting Associate Professor of Politics*
Ph.D., Indiana University
(Harvard University)

Michael Rosbash, *Assistant Professor of Biology and Rosenstiel Basic Medical Sciences Research Center*
Ph.D., Massachusetts Institute of Technology

Myron Rosenblum, *Professor of Chemistry*
Ph.D., Harvard University

Kristine M. Rosenthal, *Assistant Professor of Sociology*
Ed.D., Harvard University

***George W. Ross**, *Associate Professor of Sociology*
Ph.D., Harvard University

Harry L. Rosser, *Assistant Professor of Spanish*
Ph.D., University of North Carolina

Robert Rothchild, *Adjunct Assistant Professor of Chemistry*
Ph.D., Columbia University

Joshua Rothenberg, *Jacob D. Berg Associate Professor of Near Eastern and Judaic Studies*
M.A., Rutgers University

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Joseph J. Berliner, *Rosen Family Professor of Economics*
Ford Foundation Grant

Naftali C. Brandwein, *Rose B. and Joseph H. Cohen Professor of Modern Hebrew Literature*
Sir Isaac Wolfson Prize

Karl F. Canter, *Assistant Professor of Physics*
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Carolyn Cohen, *Professor of Biology and Rosenstiel Basic Medical Sciences Research Center*
Guggenheim Fellowship

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Kenneth Kustin, *Professor of Chemistry*
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Lemuel Shattuck Award

George Ross, *Associate Professor of Sociology*
German Marshall Fund of United States Fellowship

Benson Saler, *Associate Professor of Anthropology*
Sir Isaac Wolfson Prize

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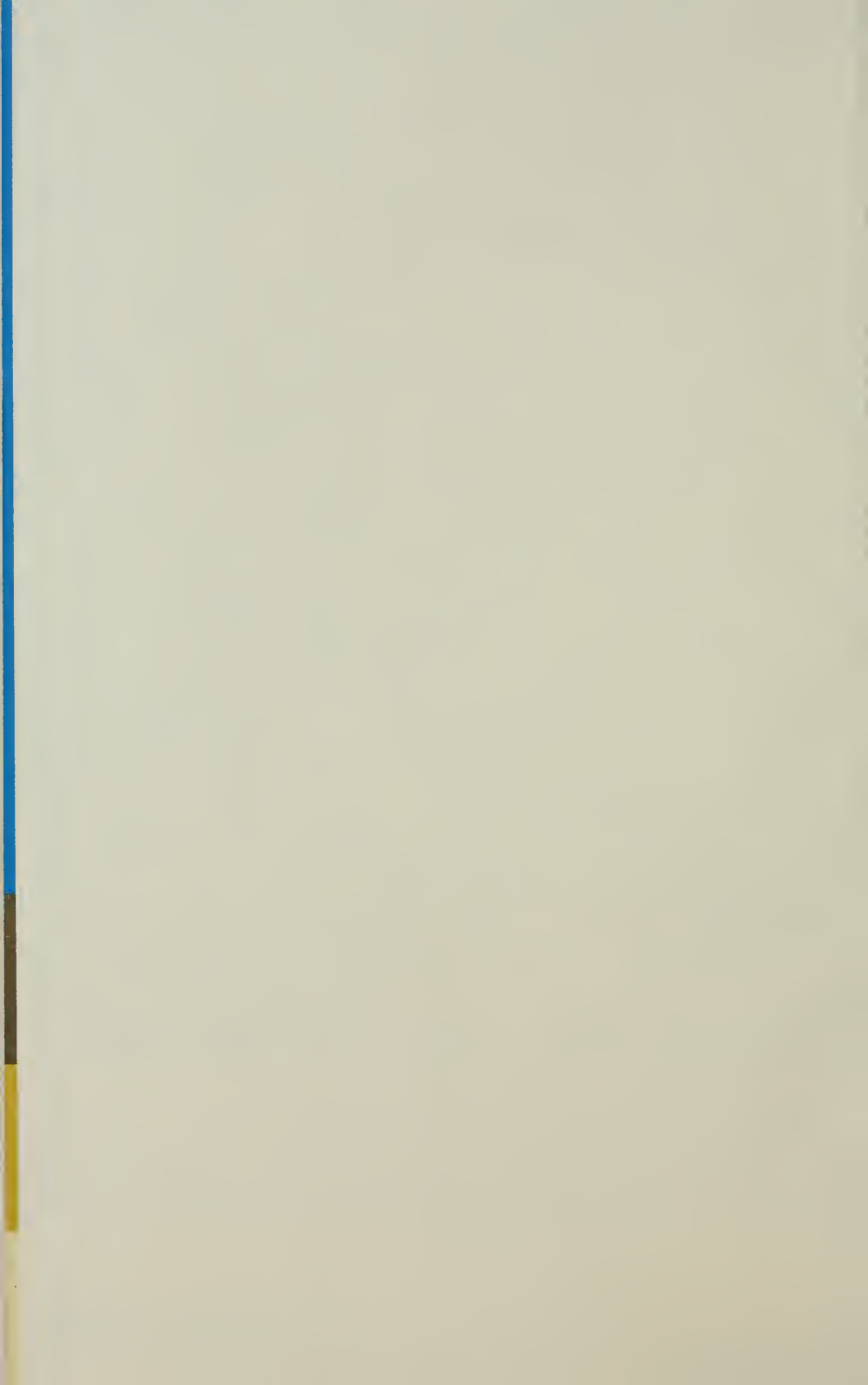
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